

Louisiana State University LSU Digital Commons

LSU Doctoral Dissertations

Graduate School

2007

The relationship between participation in professional development and level of social capital

Sylvia Caillier Melancon

Louisiana State University and Agricultural and Mechanical College

Follow this and additional works at: https://digitalcommons.lsu.edu/gradschool_dissertations



Part of the [Human Resources Management Commons](#)

Recommended Citation

Melancon, Sylvia Caillier, "The relationship between participation in professional development and level of social capital" (2007). *LSU Doctoral Dissertations*. 586.

https://digitalcommons.lsu.edu/gradschool_dissertations/586

This Dissertation is brought to you for free and open access by the Graduate School at LSU Digital Commons. It has been accepted for inclusion in LSU Doctoral Dissertations by an authorized graduate school editor of LSU Digital Commons. For more information, please contact gradetd@lsu.edu.

THE RELATIONSHIP BETWEEN PARTICIPATION IN PROFESSIONAL
DEVELOPMENT AND LEVEL OF SOCIAL CAPITAL

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The School of Human Resource Education and Workforce Development

by

Sylvia Caillier Melancon

B.S., University of Louisiana Lafayette, 1995

M.S., University of Louisiana Lafayette, 1999

May 2007

©Copyright 2007
Sylvia Caillier Melancon
All rights reserved

ACKNOWLEDGMENTS

I could not have met my educational goals without the help of God. My faith and continuous praying has carried me through this process and has strengthened my belief that with God, all things are made possible. I have truly been blessed and I count among my blessings a supportive family who made many sacrifices so that I could obtain this degree. My parents and grandparents instilled in me, at a very young age, a quest for learning and an appreciation for higher education. My family's financial support enabled me to make my academic pursuits a priority, and for that I am extremely grateful. I am also grateful to have a wonderful husband, Girard, who shares my educational values and has been my greatest source of emotional support throughout this process. I am a better person for having him in my life.

I could not have completed this final requirement for my degree without the guidance of several faculty members. My major professor, Dr. Donna H, Redmann, devoted countless hours to meeting with me and I credit her dedication and support for my completing this dissertation. Her level of professionalism is an inspiration to me. Dr. Michael F. Burnett provided me with a wealth of knowledge about research methodology and his expertise helped me to make this a better dissertation. I am grateful for all that he has taught me. Dr. John-Paul Hatala sparked an interest in me to pursue this topic, and I will always be grateful to him for helping me find my niche within HRD. Dr. Geraldine H. Johnson helped me to broaden my perspective on adult education and workplace learning and I am honored to have had her serve on my committee. Dr. Nicholas Pedriana, my Dean's Representative, provided valuable input into the methodology for this dissertation and I am thankful for his willingness to meet with me and his words of encouragement.

TABLE OF CONTENTS

ACKNOWLEDGMENTS.....	iii
LIST OF TABLES.....	vii
LIST OF FIGURES.....	ix
ABSTRACT	x
CHAPTER	
1 INTRODUCTION.....	1
Rationale	1
Purpose Statement.....	5
Objectives of the Study.....	5
Significance of the Study	9
Limitations of the Study	9
Definitions of Terms.....	10
2 REVIEW OF LITERATURE	12
Overview of Professional Development.....	12
Defining Professional Development.....	13
Training.....	14
Employee Development.....	16
Participation in Professional Development Activities	17
Measurement.....	17
Study Results	19
Social Capital.....	31
Overview of Social Networks	31
Development of Social Capital Theory	35
Theory Application	36
Social Network Components and Social Capital.....	37
Social Resources and Social Capital	40
Benefits of Social Capital.....	41
Building Social Capital.....	43
Measuring Social Capital	44
Social Capital and Human Capital.....	51
Summary	52
3 METHODOLOGY	54
Sample	54
Instrumentation and Data Collection.....	57
Demographic Variables	57
Participation in Professional Development Variables	58
Social Capital Variables.....	58
Instrument Validation	62
Survey Administration.....	62

Data Analyses	65
Objective One	65
Objective Two	66
Objective Three	68
Objective Four	69
Objective Five	70
4 RESULTS AND FINDINGS	72
Objective One	72
Gender	73
Age	73
Ethnicity	73
Years of Professional Experience in the Current Field	74
Years of Experience with the Current Employer	74
Job Level	74
Highest Level of Education Completed	75
Number of Memberships in Professional Associations	76
Objective Two	78
Mandatory Professional Development	82
Voluntary Professional Development	84
Objective Three	88
Objective Four	91
Objective Five	97
Sum Total of Voluntary Professional Development Activities Regression Equation	99
Sum Total of Voluntary Individual Professional Development Activities Regression Equation	105
Sum Total of Voluntary Group Professional Development Activities Regression Equation	111
5 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	118
Purpose and Objectives	118
Population and Sample	122
Procedures	122
Summary of Findings	124
Objective One	124
Objective Two	125
Mandatory Professional Development Activities	125
Voluntary Professional Development Activities	126
Objective Three	127
Objective Four	127
Objective Five	128
Sum Total of Voluntary Professional Development Activities	129
Sum Total of Voluntary Individual Professional Development Activities	129
Sum Total of Voluntary Group Professional Development Activities	129

Conclusions, Implications and Recommendations	130
Conclusion One	130
Conclusion Two	131
Conclusion Three	131
Conclusion Four	132
Conclusion Five	133
Conclusion Six	135
Conclusion Seven	136
Conclusion Eight	136
Conclusion Nine	136
Conclusion Ten	137
REFERENCES	138
APPENDIX	
A PROFESSIONAL DEVELOPMENT SURVEY	146
B PRE-NOTIFICATION MEMO E-MAIL	154
C SURVEY COVER LETTER	156
D POST CARD REMINDER	158
E SURVEY FOLLOW-UP LETTER	160
F MEMBERSHIPS IN PROFESSIONAL ASSOCIATIONS REPORTED BY PROFESSION EMPLOYEES OF A PROFIT-BASED ORGANIZATION IN THE SOUTHEASTERN UNITED STATES	162
VITA	165

LIST OF TABLES

1. Percentage of Adults Who Gave Selected Reasons for Participation in Work Related Courses, by Adult Characteristics	24
2. Comparisons of Early and Late Respondents to the Professional Development Survey on Selected Demographic Characteristics	64
3. Ethnicity Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States.....	74
4. Highest Level of Education Completed Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States	75
5. Number of Memberships in Professional Associations Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States	77
6. Extent of Participation in Mandatory Professional Development Activities within the Previous 12 Months Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States	83
7. Extent of Participation in Voluntary Professional Development Activities within the Previous 12 Months Reported by Professional Employees of a Profit- Based Organization in the Southeastern United States	85
8. Overall Extent of Participation in Voluntary and Mandatory Professional Development Activities within the Previous 12 Months Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States.....	87
9. Social Capital Score Computed for Professional Employees of a Profit-Based Organization in the Southeastern United States	91
10. Relationships between Social Capital Score and Overall Measures of Participation in Professional Development Activities.....	92
11. The Relationships between Social Capital Score and Participation in Categories of Professional Development Activities	95
12. The Relationship between Voluntary Professional Development Activities and Selected Demographic Variables	100

13. DFBETA and Standardized DFBETA Values for Voluntary Participation in Professional Development Regression Intercept and Predictor Variables for Case 24	103
14. Multiple Regression Analysis of Total Voluntary Professional Development Activities Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States and Selected Variables	104
15. The Relationship between Voluntary Individual Professional Development Activities and Selected Demographic Variables	106
16. DFBETA and Standardized DFBETA Values for Voluntary Individual Participation in Professional Development Regression Intercept and Predictor Variables for Case 24	109
17. Multiple Regression Analysis of Voluntary Individual Professional Development Activities Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States and Selected Variables.....	109
18. The Relationship between Voluntary Group Professional Development Activities and Selected Demographic Variables	111
19. DFBETA and Standardized DFBETA Values for Voluntary Group Participation in Professional Development Regression Intercept and Predictor Variables for Case 103	115
20. Multiple Regression Analysis of Total Voluntary Group Professional Development Activities Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States and Selected Variables.....	116

LIST OF FIGURES

1. Network Density Diagrams	33
2. Standardized Residuals for the Dependent Variable Voluntary Professional Development Activities	102
3. Standardized Residuals for the Dependent Variable Voluntary Individual Professional Development Activities	108
4. Standardized Residuals for the Dependent Variable Voluntary Group Professional Development Activities	113

ABSTRACT

The purpose of this study was to determine if a relationship exists between level of social capital and the extent of participation in professional development activities for professional employees of a profit-based organization located in the Southeastern United States.

The researcher used survey methodology to determine the extent of participation in professional development activities within a 12 month period and the level of social capital within an organizational setting. Multiple regression analyses were conducted to determine if a model exists to explain a significant portion of the variance in the extent of participation in professional development activities from selected demographic variables and level of social capital.

One key conclusion is that the study participants engaged in more self-initiated activities than any other type of professional development activity. Self-initiated activities include such activities as searching the internet for work-related information and seeking work-related information from a mentor or colleague. A second conclusion is that social capital was found to be a significant predictor of participation in voluntary professional development activities that were in individual settings. This second conclusion addresses the recent emphasis on the need to study social networks in order to understand participation in learning activities (Hatala, 2006). In addressing this need, the conclusion helps to bridge a gap in human resource development literature by increasing the understanding of the role of social capital in participation in professional development activities. Given that individual activities include one-on-one collaborations with mentors/colleagues, it is recommended that human resource development professionals include mentoring and relationship building in employee

development plans to encourage the use of one-on-one contacts to support the acquisition of work-related information.

CHAPTER 1

INTRODUCTION

Rationale

In order to remain competitive, organizations must adapt rapidly to changes in technology, the workforce, and the environments in which they operate (Cummings & Worley, 2001; Porras & Silvers, 1991). As organizations become increasingly complex and strive to remain competitive, there is growing emphasis on organizational development and productivity. Productivity has been widely researched in a variety of settings and industries, including private, governmental, and non-profit organizations (Swanson & Holton, 2001). Though a great deal of research has been conducted within the private sector, the general conclusion for organizations is that the effectiveness of organizations is highly dependent upon the productivity of the individuals they employ to carry out their missions and achieve their goals (Swanson & Holton, 2001). Driven by this philosophy, human resource development (HRD) professionals have attempted to help organizational leaders enhance the productivity of their employees by identifying the factors that influence productivity (Holton, Bates, & Ruona, 2000; Swanson, 1994).

Several factors have been identified as influencing employee productivity. Of these factors, two categories have emerged: environmental/situational factors and individual factors (Mathieu, Tannenbaum, & Salas, 1992; Noe, 1986). Environmental factors refer to those elements within the organization that contribute to productivity. Examples of environmental factors include materials and supplies (Peters & O'Connor, 1980) systems design, and mission/goals (Swanson, 1994). Individual factors, however, are those factors that are internal, or within the control of the employee. Some examples of the individual factors that contribute to employee productivity include

motivation and knowledge, skills, and abilities (KSAs) (Noe, 1986; Swanson, 1994).

U.S. workforce trends show more jobs require sufficient KSAs than previously, making it more important that employees engage in learning activities. These demands are the result of changes in technology, the workforce, and management practices (National Center for Education Statistics, 2005a). Therefore, a goal of HRD practice is helping organizations provide formal educational activities and training to develop KSAs in order to enhance employee productivity (Swanson & Holton, 2001).

KSAs are developed when employees receive the necessary resources to aid their learning. One resource organizations provide for their employees to develop KSAs is formal education. Each year in the United States, organizations are estimated to spend over 200 billion dollars providing employees with job related learning experiences to acquire the knowledge and skills necessary to be efficient and effective in their roles (Ford, Kozlowski, Kraiger, & Teachout, 1997; Holton, Bates, Ruona, 2000). The American Society for Training and Development (ASTD), a professional organization for those in the area of HRD dedicated to providing formal training and education to employees, noted in its 2005 State of the Industry Report of its broadest sample of organizations that in 2004, the average expenditure per employee for formal training was \$955 (an increase from the 2003 average expenditure per employee of \$820). The expenditure amounts to 2.34% of the money organizations allocate for payroll. Within the same year, the average number of hours employees spent in training and development increased from 26 hours in 2003, to 32 hours in 2004. In addition to increased training dollars and time invested in training and development, there has also been an increase in the amount of content delivered via technology, such as computer-based training, to provide easy access to resources for learning. In 2004, 27% of

learning content was delivered via technology (an increase from 24% in 2003). Of the technology-based learning, 75% was delivered online, and of that figure, 75% was self-paced.

Other resources for developing KSAs include informal, or self-initiated, activities. For instance, individuals develop KSAs through activities such as talking with others, collaborating with others, observing others, sharing resources, searching the internet, scanning professional magazines and journals, and engaging in trial and error (Lohman, 2005). While these self-initiated activities are not accounted for in the ASTD statistics, it has been estimated that 90% of new KSAs are acquired through self-initiated activities (Brinkerhoff & Gill, 1994) and that salary and wage costs associated with work time spent participating in self-initiated activities is almost equal to the amount of money organizations spend on developing and providing formal learning activities (Benson, 1997).

In addition to formal and informal learning activities, relationships with others can also serve as resources for acquiring KSAs (Coleman, 1988; Inkpen & Tsang, 2005; Nahapiet & Ghoshal, 1998). This can be seen in the types of self-initiated activities where individuals engage in collaboration with other individuals (Lohman, 2005; Lohman & Woolf, 2001). As individuals develop new relationships, they increase the likelihood that the people they meet will link them to information and other resources necessary to be more productive on their jobs (Inkpen & Tsang, 2005; Schuller, 2001). This potential to acquire valuable resources (such as job-related information) through one's relationships with others is referred to as social capital (Lin, 1999a; Portes, 1998). Social capital can be used to develop human capital, which refers to the value of an individual's knowledge, skills, and abilities to an organization (Swanson & Holton, 2001),

when the resources obtained from one's relationships results in new learning (Coleman, 1988; Leonard, 2004; Portes, 1998; Schuller, 2001). This has sparked an interest among HRD researchers in the implications of social capital to the field (Akdere, 2005; Gubbins & Garavan, 2005). Social capital is obtained by the commonly termed practice of "networking," whereby individuals seek opportunities to develop new relationships or maintain relationships with others who can provide them with resources.

Participation in some forms of professional development activities (e.g. group-based or interactive) allows individuals to network and develop relationships that help them acquire job related resources. Professional development activities, as defined for this study, refer to a broad array of activities which are designed to enhance an individual's knowledge, skills, and abilities as well as professional and career growth. These activities are meant to include formal training and development, self-initiated learning activities, conference attendance, and activity in professional organizations. Group-based professional development activities afford individuals with opportunities to network with others who can assist them in learning (Schacter, 2001).

Tharenou (2001) identified the expectation of gaining valued outcomes as playing a role in an individual's decision to participate in professional development. It is also known that some individuals engage in certain behaviors to maintain or increase their social capital (Lin, 1999a). Given the potential for gaining learning resources through relationships developed while participating in professional development activities (Lohman & Woolf, 2001), then perhaps some individuals are more likely to participate in certain learning activities in order to increase or maintain their levels of social capital. It follows logically that there is likely to be a connection between participation in professional development activities and the amount of social capital one

possesses. If this connection were to be supported, it may mean that individuals may be more likely to participate in professional development if they believe it can assist them in acquiring or maintaining social capital and the resources that are embedded within it to enhance their knowledge, skills, and abilities.

Purpose Statement

The primary purpose of this study was to determine if a relationship exists between the level of social capital and the extent of participation in professional development activities for professional employees of a profit-based organization located in the Southeastern United States. Because professional development is intended to improve performance, this study sought to help bridge the gap in the literature between social capital and factors that explain participation in training and development activities. Perhaps social capital can explain, along with many other factors previously studied, why some people are more drawn to these activities.

Objectives of the Study

Several research objectives guided this study:

1. Describe the research participants on selected personal and professional characteristics:
 - A. Gender
 - B. Age
 - C. Ethnicity
 - D. Years of professional experience in current field
 - E. Years of experience with the current employer
 - F. Job level
 - G. Highest level of education completed

- H. Number of memberships in professional associations
 - 1. Directly related to the job (e.g. in one's field)
 - 2. Indirectly related to the job (e.g. toast masters or toast mistress)
- 2. Describe the extent of participation in the following categories of professional development activities within the last 12 months:
 - A. Mandatory Professional Development
 - 1. Internal training (provided by the employer)
 - a. Individual/Self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training)
 - 2. External training (provided by a professional association) reimbursed by the employer
 - a. Individual/Self-paced learning activities (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training, conferences)
 - 3. External training (provided by a professional association) *not* reimbursed by employer
 - a. Individual self-paced learning activities (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training, conferences)
 - 4. College course(s) paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence,

computer-based training)

b. Group setting (e.g. traditional classroom-based)

5. College course(s) *not* paid for by the employer

a. Individual/self-paced (e.g. independent study, correspondence, computer-based)

b. Group setting (e.g. traditional classroom-based training)

6. Self-Initiated learning activities

7. Other mandatory work related learning activities as specified by the respondent

B. Voluntary Professional Development

1. Internal training (provided by the employer)

a. Individual/Self-paced (e.g. independent study, correspondence, computer-based training)

b. Group setting (e.g. traditional classroom-based training)

2. External training (provided by a professional association) reimbursed by the employer

a. Individual/Self-paced learning activities (e.g. independent study, correspondence, computer-based training)

b. Group setting (e.g. traditional classroom-based training, conferences)

3. External training (provided by a professional association) *not* reimbursed by employer

a. Individual self-paced learning activities (e.g. independent study, correspondence, computer-based training)

- b. Group setting (e.g. traditional classroom-based training, conferences)
 - 4. College course(s) paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based)
 - 5. College course(s) *not* paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based)
 - 6. Self-Initiated learning activities
 - 7. Other mandatory work related learning activities as specified by the respondent
- 3. Determine levels of social capital.
- 4. Determine if a relationship exists between levels of social capital and extent of participation in professional development activities.
- 5. Determine if a model exists that explains a significant portion of the variance in the extent of participation in professional development activities from the following selected variables:
 - A. Level of social capital
 - B. Gender
 - C. Age
 - D. Ethnicity
 - E. Years of professional experience in current field

- F. Years of experience with the current employer
- G. Job level
- H. Highest level of education completed
- I. Number of memberships in professional associations
 - 1. Directly related to the job (i.e. in one's field)
 - 2. Indirectly related to one's job (e.g. toastmasters)

Significance of the Study

According to the National Center for Education Statistics (2005a), more information is needed to explain why individuals participate in formal learning activities and Lohman (2005) states that few studies have examined how characteristics of the worker and the work environment influence participation in informal workplace learning. Furthermore, Hatala (2006) states that analyzing individuals' networks may assist human resource development (HRD) professionals with theory building regarding participation in learning activities. Therefore, this study helps to bridge a gap in HRD literature by increasing the understanding of the nature of the role of social capital in participation in professional development. HRD professionals and organizational leaders can apply the findings to improve on marketing professional development activities by emphasizing the benefits of networking to acquire KSAs. Additionally, HRD professionals and organizational leaders can improve on employee development plans by including relationship-building to increase network contacts in order to support learning.

Limitations of the Study

This study focuses on the professional development activities of the employees of a profit-based organization in the Southeastern United States. The corporation is

international; however, findings are not intended to be generalized to the corporation's employees who are based in other regions of the United States and in other countries. The study consists entirely of self-report information obtained through paper and pencil questionnaires.

Definitions of Terms

- Correspondence course: individual, self-paced distance learning activities.
- KSAs: knowledge, skills, and abilities.
- Mentoring: the practice of sharing knowledge and experience with a less experienced individual about a particular task, occupation, or the workplace in general.
- Name Generator Questionnaire: asking respondents to generate a list of individuals with whom they have had contact.
- Networking: forming relationships with others.
- Participation: attendance in professional development activities (such as formal learning opportunities) or taking an active role in learning activities.
- Position Generator Questionnaire: asking respondents to indicate the interaction they have with individuals in certain positions (e.g. occupations, work units, etc).
- Professional Development: a broad array of activities which are designed to enhance an individual's knowledge, skills, and abilities as well as professional and career growth. These activities are meant to include formal training and development, self-initiated learning activities, conference attendance, and activity in professional organizations.
- Resource Generator Summary: asking respondents to indicate the ties to specific

resources and the strength of those ties.

- Self-initiated Learning Activities: Informal learning activities of a voluntary or mandatory nature which include reading professional journals/magazines, researching work-related information utilizing private or public resources, searching the internet for work-related information, or seeking work-related information from a mentor/colleague.
- Social Capital: the potential to acquire valuable resources through relationships.
- Social Networks: one's connections/relationships with others.
- Social Resources: accessed resources that are embedded within social networks.
- Training: "a planned learning experience designed to bring about permanent change in an individual's knowledge, attitudes, or skills" (Noe, 1986, p. 736).

CHAPTER 2

REVIEW OF LITERATURE

This chapter is a review of research related to the variables of interest in this study, including professional development and social capital. A discussion of the following is provided: overview of training and professional development, participation in professional development activities, and social capital.

Overview of Professional Development

Due to changes in technology, the workforce, and changes in management practices, there are new demands placed on workers. Workers are expected to keep up with the changes, which often mean increases in their job responsibilities (National Center for Education Statistics, 2005a). Thus, in order to keep up with the demands, individuals are required to know more and to do more. Professional development is the means through which individuals increase their knowledge, skills and abilities and adapt to changes in the workplace (Gant n.d.).

A goal of human resource development (HRD) is to provide professional development programs consisting of structured, unstructured, formal, and informal learning experiences (Davis & Davis, 1998). These programs improve individual performance which in turn benefits the organization by increasing overall productivity and economic prosperity (Swanson & Holton, 2001). Therefore, the benefits of these development programs far exceed that of the organization. In addition to improving individual performance levels, professional development is associated with increases in life skills which are often associated with increases in self-esteem and self-worth (Swanson & Holton, 2001).

Defining Professional Development

The Educational Resources Information Center (ERIC) database thesaurus refers to *professional development* as “activities to enhance professional career growth.” A search of scholarly, peer reviewed research using the term “professional development” yields research conducted primarily in the areas of medicine and education. An examination of this search revealed that elementary and secondary teachers have received the majority of attention from researchers due to a recent emphasis on continuing education in the field. For instance, Professional Development Schools have been developed to ensure that teachers continue to improve on their knowledge, skills and abilities by engaging in critical reflection, inquiry and collaboration with peers, and encouraging novices to work alongside experts serving as mentors (Darling-Hammond & McLaughlin, 1995). Due to the field’s emphasis on professional development, Gant (n.d.) had this to say about the meaning of the term within the context of teacher development:

Professional development ... goes beyond the term ‘training’ with its implications of learning skills, and encompasses a definition that includes formal and informal means of helping teachers not only learn new skills but also develop new insights into pedagogy and their own practice, and explore new or advanced understandings of content and resources. [This] definition of professional development includes support for teachers. (Gant, n.d.)

Gant’s definition for teacher professional development encompasses components of two forms of development often referred to within the field of human resource development (HRD): training and employee development. Training and employee

development both point to an array of activities, formal and informal, job-specific or general, which are designed to enhance growth in one's career.

Similarly, the term "professional development" is used in this study to refer to an array of activities designed to enhance an individual's knowledge, skills, and abilities as well as professional and career growth. These activities are meant to include formal training and development, self-initiated learning activities, conference attendance, and activity in professional organizations. Thus for the purpose of the present study, the term "professional development" is meant to include both training and employee development. A more in depth review of the concepts of training and employee development follows.

Training

Noe (1986) defines training as "a planned learning experience designed to bring about permanent change in an individual's knowledge, attitudes, or skills" (p. 736). Though his definition is consistent with common uses of the term, Noe's definition of training focuses on only one aspect of training referred to as formal or structured training. Structured training is a key component of training and development in business and industry. This is reflected in the amount of money organizations spend annually on structured learning experiences. It is estimated that United States organizations spend over 200 billion dollars annually providing employees with structured learning experiences to acquire the knowledge and skills necessary to improve their job performance (Ford, Kozlowski, Kraiger, & Teachout, 1997; Holton, Bates, Ruona, 2000). The American Society for Training and Development (ASTD) noted in its 2005 State of the Industry Report of its broadest sample of organizations that in 2004, organizations spent an average of \$955 per employee (an increase from

the 2003 average expenditure per employee of \$820), accounting for 2.34% of the amount of money allocated for employee payroll. Also noted between the 2003 and 2004 years, was an increase in the amount of hours spent in training from 26 hours in 2003, to 32 hours in 2004. In addition to increases in the training dollars and amount of time invested in training and development, there has been an increase in the amount of content delivered via technology. For instance, in 2004, 27% of learning content was delivered via technology (an increase from 24% in 2003). Of the technology-based learning, 75% was delivered on-line, and of that figure, 75% was self-paced.

Whereas structured training refers to formal training programs which are often sponsored by an organization, unstructured training, however, is much broader in meaning (U.S. Department of Labor, 1989 in Chao, 1997). Unstructured training differs from structured training in two fundamental ways. First, unstructured training refers to an unplanned activity (which constitutes a wide variety of on-the-job experiences) without a clear beginning and ending (Chao, 1997). According to Chao (1997) without a clear beginning and ending, it is difficult for a trainer to identify when learning objectives are met. The second distinction between structured and unstructured training is that due to the fact that unstructured interventions are not designed by a human resources department within an organization, they are often not evaluated, making it difficult to determine the impact of the training on an organization.

Despite the limitations in the evaluation of unstructured and informal training, these types of training are often considered powerful learning tools due to the amount of information that is covered when individuals have an opportunity to observe and interact with others during these events (Chao, 1997). Such experiences contribute to the socialization of employees, orienting them toward the job, the organization, and its

members. In some cases, the outcome of socialization is the decision to change one's role within the organization or even one's career. Therefore, the impact of informal training may be even more valuable than formal, structured training (Feldman, 1989).

Employee Development

In addition to the distinction between structured and unstructured training, a distinction is also made between training and employee development (London, 1989; Noe, Wilk, Mullen & Wanek, 1997). According to Noe and associates (1997), the distinction is that employee development objectives are not tied to employee skills and successful behaviors for a specific job. London (1989) listed in his interpretation of employee development, courses, workshops, seminars, and activities that enhance one's personal and professional growth.

Noe and associates (1997) state here are several dimensions by which one can understand the construct of employee development: voluntary versus involuntary; informal versus formal; current versus future oriented; incremental versus frame-breaking; and introspective versus interactive. Voluntary participation, as opposed to involuntary participation in employee development, refers to an individual's decision to seek out development activities due to an interest in a certain area rather than mere compliance with an organization's policies. Informal development activities are those that are not sponsored by an organization and may include extracurricular activities which help people develop skills they can transfer to the workplace. Formal activities are consistent with structured learning activities, such as courses, that are sponsored by the organization. While many individuals seek developmental activities to improve performance levels in their current jobs, in some cases, people seek developmental activities to prepare them for anticipated jobs. Noe and associates (1997) cite a link

between participation in developmental activities and extrinsic rewards such as promotions and increased pay. Incremental situations are those that are self-paced, while frame-breaking situations are difficult situations in which the employee is placed and expected to acquire a large number of skills. These frame-breaking situations require significantly more skills than the current level. Frame-breaking activities are associated with a high risk of failure because there is little time to adapt to changes in one's role. Finally, introspective activities are those that allow an individual to explore his/her own values, beliefs, and assess his/her current skill levels in the absence of input from others, while interactive experiences require collaboration with others.

Participation in Professional Development Activities

Measurement

Due to the diversity of professional development activities, measurement of participation in professional development activities is dependent upon how researchers operationalize the term. Researchers who have attempted to measure participation in professional development have operationalized professional development activities as participation in the following: courses, workshops, seminars (London, 1989; National Center for Education Statistics, 2005a); talking with others, collaborating with others, observing others, searching the internet, scanning professional periodicals, engaging in trial and error learning, reflecting on one's actions (Lohman, 2005); post-secondary vocational degree/diploma programs, apprenticeships, on-the-job demonstrations, receipt of supervisory training or mentoring on the job, self-paced study, and attendance at informal presentations, conferences, trade shows or conventions (National Center for Education Statistics, 2005a); college courses with tuition reimbursed by the employer, development activities provided or subsidized by employer, on-site employee

development resource centers (Warr & Birdi, 1998). According to Warr and Birdi (1998), company-sponsored tuition reimbursement schemes refer to college courses that are relevant to one's job and that are reimbursed by the employer. Company-subsidized employee development programs are learning activities for which employers provide employees with a fixed amount of money to cover the costs. Employee development centers are on-site resource centers for work-related learning which can provide learning packages on video, computer, or text in a variety of subjects related to the workplace (Warr & Birdi).

Studies on participation have involved survey and interview research whereby subjects indicate the degree to which they have participated in professional development activities (Lohman, 2000; Lohman & Woolf, 2001; National Center for Education Statistics, 2005a; Warr & Birdi, 1998). Some researchers have approached measurement qualitatively by asking individuals to describe the types and sources of professional development activities in which they engage (Lohman, 2000; Lohman & Woolf, 2001). Other researchers have used quantitative approaches by asking individuals to indicate the degree to which they have participated in particular activities selected for inclusion in the studies (Lohman, 2005; National Center for Education Statistics, 2005a; Warr & Birdi, 1998). Level of participation has been obtained by asking subjects to indicate whether they have participated in select professional development activities (National Center for Education Statistics, 2005a; Warr & Birdi, 1998) to describe how frequently they participate they participate on likert-type scales (e.g. 1-never to 5-always) (Lohman, 2005) and to indicate the amount of time spent on such learning activities (e.g. how many hours spent weekly on the activity) (Lohman, 2005; National Center for Education Statistics, 2005a; Warr & Birdi, 1998). In addition

to obtaining information about level of participation, studies have also explored the reasons for participation and the factors that inhibit participation in professional development (Lohman, 2000, 2005; Lohman & Woolf, 2001; National Center for Education Statistics, 2005a; Warr & Birdi, 1998).

Researchers have analyzed the data obtained from these studies by assessing the individual activities and by grouping the activities into categories based on existing literature on professional development (Lohman, 2005; National Center for Education Statistics, 2005a; Warr & Birdi, 1998). These categories have included formal versus informal, and voluntary versus involuntary participation. The distinction between formal and informal activities has been defined in these studies as the presence of an instructor or the absence of an instructor (National Center for Education Statistics, 2005a). Others researchers have defined informal learning more loosely as activities that are planned or unplanned, structured or unstructured, which are initiated by people in work settings (Lohman, 2005; Marsick & Watkins, 1990). Lohman (2005) uses the term “self-initiated” interchangeably with “informal learning.” The distinction between involuntary activities and voluntary activities is whether or not the activity occurs at the employee’s discretion and whether or not it is undertaken during work time or outside of the individual’s work hours (Warr & Birdi, 1998).

Study Results

Between 2002 and 2003, the National Household Education Survey (NHES), sponsored by the U.S. Department of Education, revealed that 40 percent of U.S. adults (defined as age 16 and older) participated in formal professional development, and 58 percent participated in informal professional development (National Center for Education Statistics, 2005a). Of the formal learning activities, 33 percent participated

in courses related to a job, 9 percent were enrolled in college courses, 2 percent were enrolled in vocational degree/diploma programs, and 1 percent participated in an apprenticeship leading to a journeyman status. Of the informal activities, 56 percent had participated in an on-the-job demonstration conducted by a supervisor or coworker, 43 percent took part in a supervisor or mentor training, and 31 percent participated in self-paced/independent study. A separate analysis of U.S. citizens who were employed for a full 12 months during the 2002-2003 year revealed that 75 percent of them participated in some form of informal work-related learning.

In addition to the amount of participation in professional development, NHES researchers also examined the demographic characteristics in order to identify who was most likely to participate in certain formal and informal activities. Multivariate analyses were run to determine the influence of particular demographic characteristics (e.g. age, sex, race/ethnicity, and highest education completed) while controlling for others. The youngest age group (ages 16-24) was more likely than any other age group to participate in formal professional development activities. In particular, this age group was more likely to participate in college courses or certificate programs than any other age group. They were also more likely than the oldest age group (65 and older) to participate in work-related courses, which supports findings that participation rates decline with age (Cleveland & Shore, 1992; Warr & Birdi, 1998). In particular, Warr and Birdi (1998) examined the influence of age on voluntary participation in development activities. The researchers state that while it is “known that older workers participate in less formal training than younger ones” (p. 190), more attention should be paid to understanding age effects with respect to voluntary participation in professional development as older individuals are less likely to participate in such activities.

Gender and ethnicity differences for the NHES survey (National Center for Education Statistics, 2005a) were slightly more difficult to interpret. With respect to gender, while bivariate analyses showed no gender differences in participation, multivariate analyses, which controlled for other demographic characteristics such as age, ethnicity, education, and income, showed that males were less likely than females to participate in formal professional development activities. However, the difference was associated with a negligible effect size of .1. No differences were found between Asians, Whites, and Hispanics in participation rates, after controlling for other factors such as income and education level. Whites were more likely than Blacks to participate, though the effect size for the difference was less than .2 (National Center for Education Statistics, 2005a).

With respect to education level, the most highly educated adults surveyed (those with graduate or professional degrees) were more likely to participate in work-related courses, and college courses than all other education groups. Those in professional and management positions were more likely to participate in work-related courses than those in service, sales, support occupations, and trades (National Center for Education Statistics, 2005a).

With respect to informal professional development activities, age trends remained similar to those of formal activities in that participation declined with age. The 16-24 age group was most likely to participate in on-the-job demonstrations and supervised training and mentoring than any other age group and they were also more likely than the oldest group (ages 65 and older) to participate in all of the informal activities studied. Men were more likely than women to attend conferences, trade shows, or conventions and they were more likely to participate in self-

paced/independent study using computer software. The most highly educated (those with graduate and professional degrees) were more likely than those with any other education level to attend conferences, trade shows, informal presentations, and to participate in self-paced/independent study. The same was found for those in the highest position levels, as those in professional or managerial positions were more likely than those in sales, service, support occupations, and trades to attend conferences, trade shows, conventions, informal presentations, and to participate in self-paced/independent activities. Asian adults were more likely than White adults to participate in self-paced/independent study, and they were less likely than White adults to participate in supervised training and mentoring. Likewise, Hispanic adults were also less likely than White adults to participate in on-the-job demonstrations and supervised training or mentoring (National Center for Education Statistics, 2005a).

In a similar report to identify the reasons for participation (National Center for Education Statistics 2005b), researchers for the National Household Education Survey (NHES) program assessed college courses not taken as part of a degree program, seminars, training sessions, and workshops (sponsored by businesses, government agencies, and other entities) for work-related reasons. Almost all (92 percent) reported that they participated in these activities to maintain or improve on current skills. A majority (77 percent) reported that they participated to acquire new knowledge and skills, and 20 percent reported that the purpose of their participation was to change jobs or careers.

Demographic information obtained from the NHES survey yielded interesting findings about the reasons for participation. Participants between the ages of 16 and 30 were most likely to participate to learn new skills and to change a job or career (National

Center for Education Statistics, 2005b). These findings are consistent with previous studies on age trends: younger workers are more likely to participate in developmental activities in order to prepare for more job responsibilities (McEnrue, 1989). Those between the ages of 31 and 65 were most likely to participate to maintain current skills (National Center for Education Statistics 2005b). Individuals between the ages of 16 and 40 were also most likely to participate in such activities because they were required by an employer, followed closely by those in the 41 to 65 age group (National Center for Education Statistics 2005b).

As indicated in the National Household Education Survey (National Center for Education Statistics, 2005b), women were more likely than men to participate in order to learn new skills (women = 80 percent; men = 73 percent) as well as to change a job or career (women = 20 percent; men = 17 percent). Men, however, were more likely to participate to receive a promotion or pay raise (men = 19 percent; women = 17 percent). The complete data summary for the survey is presented in Table 1.

In an effort to understand and categorize factors that contribute to participation, Noe and associates (1997) outlined antecedents to participation in such developmental activities and separated them into the broad constructs of organizational versus individual factors. Organizational antecedents to participation in development activities include business strategy, climate, and pay systems. The authors cite organizations' attempts to ensure that technological skills are up-to-date for individuals who are in technical positions as an example of how business strategy influences participation. Other examples refer to strategies regarding the selection and promotion of individuals based on their skill levels. Climate contributes to participation when it is perceived as supportive of development. Support from departments, supervisors and peers have

Table 1

Percentage of Adults Who Gave Selected Reasons for Participation in Work Related Courses, by Adult Characteristics, 2002-2003

Characteristic	No. of adults (thousands)	Reasons for Participation					
		All Adult Participants				Employed Adult Participants ³	
		To maintain or improve skills or knowledge	To learn completely new skills or knowledge	To help change job or career field ¹	To get or keep certificate or license ²	Because employer required or recommended it	To receive a promotion or pay raise
Total	68,499	92	77	19	33	76	18
Age							
16-30	16,781	88	84	29	27	79	26
31-40	16,429	94	77	18	37	79	18
41-50	19,304	93	74	16	34	74	14
51-65	14,012	95	70	13	35	74	13
66 years or older	1,973	84	75	7	35	68	11
Sex							
Male	32,458	93	73	17	35	77	19
Female	36,041	92	80	20	32	76	17
Race/Ethnicity							
White, non-Hispanic	51,552	92	75	16	34	76	16
Black, non-Hispanic	7,245	93	85	28	39	75	26
Hispanic	6,150	91	83	30	28	78	26
Asian or Pacific Islander, non-Hispanic	2,414	90	66	24	26	72	19
Other race, non-Hispanic	1,139	90	76	19	31	80	23

(Table continued)

Highest education level completed							
Less than a high school diploma/equivalent	2,972	78	82	41	25	75	22
Some college/vocational/associate's degree	21,183	92	79	20	33	79	21
Bachelor's degree	18,740	94	74	16	32	77	13
Graduate or professional degree	11,336	96	72	11	36	69	9
Employment and Occupation							
Employed in the last 12 months	64,559	93	76	18	33	76	18
Professional/managerial	29,207	96	75	12	35	73	13
Sales/service/clerical	26,433	91	79	23	30	78	22
Employment and Occupation							
Trades and labor	8,919	87	75	19	37	83	21
Not employed in the last 12 months	3,940	83	78	38	34	†	†

(Table continued)

† Not applicable.

¹ Full text worded in the survey: “To help you change your job or career, enter the workforce, or start your own business.”

² Full text worded in the survey: “To get or keep a state industry certificate or license.”

³ These items were asked only of adults who reported having worked in the past 12 months and who were not only self-employed.

Note: Formal work-related courses include any training, courses, or classes that had an instructor and were related to a job or career whether or not the respondent had a job when he or she took them. Excluded from this type of adult education are the basic skills or GED classes, as well as courses that participants took in pursuit of a post-secondary credential or as part of an apprenticeship program. Information was conducted on up to four work-related courses or trainings taken in the previous 12 months and reported as work-related. If an adult took more than four courses, four were sampled for data collection. Detail may not sum to totals because of rounding. Standard errors for this table are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2005088>

Source: U.S. Department of Education, National Center for Education Statistics, Adult Education for Work-Related Reasons Survey of the 2003 National Household Education Surveys Program.

Note. From National Center for Education Statistics (2005). Reason’s for adults’ participation in work-related courses, 2002-03. United States Department of Education. Institute of Education Sciences.
<http://nces.ed.gov/pubs2005/2005088.pdf>.

been shown to influence perceptions of development activities (Broad & Newstrom, 1992; McDonald & Hite, 1997). Pay systems refer to incentive programs that reward employees for participation with increased pay and promotions (Noe et al., 1997).

While Noe and associates (1997) noted a variety of individual antecedents, they organized them according to immutable characteristics as well as attitudes and beliefs. Immutable characteristics refer to an array of demographic characteristics according to which participation rates are described, including age, race, gender, and cognitive ability. Noe et al. (1997) state differences in participation rates according to age, race, and gender are likely due to differing amounts of encouragement and opportunities to participate in development opportunities. Factors such as these were not controlled for in the NHES, which did find some differences in participation on selected demographic characteristics. However, cognitive ability may influence participation rates because of individuals' own perceptions about their ability to acquire new knowledge and skills (Noe et al., 1997).

Attitudes and beliefs also determine participation. It has been supported that individual's past experiences with development activities will influence their participation in future activities (Noe, 1986). Positive experiences, as opposed to negative ones are more likely to continue to participate in future development activities. In addition to attitudes and beliefs about training, attitudes and beliefs about one's organization and level of satisfaction with one's job can also serve as antecedents (Noe et al., 1997).

Other attitudes and beliefs that impact participation are related to an individual's motivation to learn and motivation to transfer learning to the job. Motivation to learn (also referred to as motivation to train) is an individual's desire to learn new content (Noe, 1986). Motivation to transfer is the desire to generalize and apply new knowledge

to one's job after a developmental event (Noe, 1986). The two concepts both contribute to training effectiveness, and are generally referred to as training motivation. Training motivation refers to the "direction, effort, intensity, and persistence that trainees apply to learning-oriented activities before, during, and after training" (Salas & Canon-Bowers, 2001, p. 479). It has also been described as a force that energizes participants, directing them to learn and use new knowledge in spite of criticism and insufficient reinforcement (Noe, 1986). Motivation to learn and motivation to transfer have been widely researched as separate constructs; however, Naquin and Holton (2002) proposed the development of a new construct which considers both forms of training motivation in combination. The construct, referred to as "motivation to improve work through learning" (p. 358), is believed to be a function of an individual's motivation to learn and motivation to transfer. According to Naquin and Holton (2002), motivation to improve work through learning is a powerful construct because it incorporates both forms of training motivation on an individual's desire to improve performance.

Multiple sources have examined how training motivation relates to participation in professional development (Bates, 2001; Noe & Wilk, 1993; Tharenou, 1997, 2001). Tharenou (2001) found that both motivation to learn and motivation through expectation explained participation in professional development activities. That is, individuals who are more motivated to learn are more likely to participate in professional development. Also, individuals who believed that participating in development activities would result in acquiring new knowledge, skills, and abilities, which would lead to specific outcomes, were more motivated to participate in such activities.

Another form of training motivation is an individual's motivation to participate (Noe & Wilk, 1993). A distinction should be made between motivation to learn and

motivation to participate. According to Bates (2001), it is possible for an individual to have positive attitudes about developmental activities, but still not participate in them. Studies such as Tharenou's (2001) and Noe and associates' (1997) provided more insight into which factors lead an individual to participate in professional development activities, but a more recent study tested a model which designates the relationship between several variables in an individual's decision to participate in developmental activities. Maurer, Weiss and Barbeite (2003) used a structural equation modeling technique to provide a model of involvement in work related learning and development activity. Drawing on existing literature about the factors that influence participation, the authors tested the relationship between them. Just as Noe and associates (1997) suggested, the model consists of individual and situational variables; however, Maurer and associates included motivational and age variables. The hypothesized model was supported with the following direct influences (Maurer et al., 2003):

age→ individual and situational variables→ perceptions of benefits and self efficacy→ attitudes about development→ intentions for development→ participation in development.

Maurer and associates (2003) suggest that the age of an employee has a negative effect on individual and situational variables that support their participation in development. These individual and situational variables influence an individual's perceptions about the benefits of development and their belief that they can be successful in such activities. The perceived benefits and self-efficacy influence one's intentions to participate, which directly affects their participation. Prior participation also had a direct effect on one's intentions to participate, which supports previous research that past experience will influence a person's decision to participate in developmental

activities. In all, it is indicated in the model that individuals are likely to participate in developmental activities if they have had positive experiences with development, they believe they can be successful in learning, they have social support at work and outside of work, they are involved in their jobs, they have insight into their careers, they see a need for development, and believe there will be desirable outcomes associated with development. As Noe (1986) suggested, the differential effects of age are likely due to a lack of support and encouragement for older individuals (relative to the ages of one's coworkers) to pursue challenging developmental activities (Maurer et al., 2003).

In an attempt to further identify the factors that contribute to participation in developmental activities for teachers and HRD professionals, Lohman (2005) and Lohman and Woolf (2001), focused on informal workplace learning. The term is defined by the researchers as activities that are initiated by the employee in the workplace, which are perceived to enhance professional knowledge and skills: talking with others; collaborating with others; observing others; sharing materials and resources; searching the internet; scanning professional periodicals; engaging in trial and error; reflecting on one's actions; and other informal workplace learning activities identified by participants. In her 2005 study, Lohman asked both public school teachers and HRD professionals to indicate the frequency of participation in these activities, and the degree to which lack of time, lack of access, lack of monetary rewards, and lack of recognition, serve to inhibit participation in these activities. Finally, research participants were asked to indicate personal characteristics including age, gender, educational level, industry level, and job title, in order to determine the role of these factors in participation in informal learning. Lohman found that various organizational and personal factors influence participation in informal workplace learning for the two groups. The personal factors identified for both

groups include initiative, self-efficacy, love of learning, interest in the profession, commitment to professional development, a nurturing personality, and an outgoing personality. However, teachers prefer group-based learning activities (collaboration, sharing resources with others, and trial and error learning) whereas HRD professionals prefer independent learning activities (searching the internet, scanning magazines and journals). Factors that serve to inhibit participation in informal workplace learning for both groups include a lack of support from the organization, unwillingness of others, and inaccessibility of subject matter experts. In addition to these factors, teachers cite the additional role of limited funding as a reason for not participating in informal workplace learning.

Social Capital

Overview of Social Networks

In order to understand social capital, an overview of basic human interaction is necessary. Sociologists use the word “networks” to describe the complexities of human interaction. Consistent with the sociological view of the world in terms of groups, networks consist of a group of actors and their connections to each other. According to Specht (1986), a social network is defined as “a specific set of interrelated persons” (p. 220). Similarly, Kilduff and Tsai (2003) define it as “a set of actors and the relations (such as friendship, communication, advice) that connect them” (p. 135). Though these definitions are limited to networks belonging to individuals, it is important to note that organizations, communities and even nations can also be viewed as actors who are networked together (Tindall & Wellman, 2001). In terms of individual social networks, also referred to as “personal networks” (Degenne & Forse, 1999 p.13), the individual is linked to various other individuals. By analyzing personal networks, one gains a better

understanding of the nature of the relationships shared in a particular network and the resources that exist within it (Tindall & Wellman, 2001). Therefore, this section reviews the basic concepts related to social networks, including network structure and analysis.

The term “social network” is sometimes used interchangeably with “social support,” though social networks refer to a much more specific concept of human interaction. Social support refers to voluntary associations with clear boundaries and purpose, such as self-help groups (Specht, 1986). Though social networks may provide some degree of support, they vary from individual to individual and are without boundaries in the potential number of interactions. Social networks are a basic part of human development, changing with individuals’ physical, social, cognitive, and emotional needs. It is important to note that one individual can have different social networks for different areas of interest (i.e. work and personal life).

In the broadest sense, social network research is an attempt to understand society through patterns and linkages among people. Social scientists use social networks to conduct analyses to study the dynamics of relationships. Social networks afford analyses of groups of people who interact and the ties between them (Granovetter, 1982; Hatala, 2003; Lein & Sussman, 1983; Specht, 1986).

The patterns of relationships are best understood when represented visually through conceptual models or diagrams called sociograms. The renowned Hawthorne studies, conducted by Frederick Taylor from 1927-1932 at Western Electric Hawthorne Works in Chicago, were among the first to use sociograms to assess social network structure; therefore, some argue that social network analysis is rooted in organizational settings (Kilduff & Tsai, 2003). The contribution of sociograms has advanced social network research from description to analysis (Kilduff & Tsai, 2003).

Sociograms are used to illustrate the number of people involved in the network and the connections, or ties, between them. With the aid of sociograms, social networks are described in terms of density and strength of ties. Density, also called “cohesion” (Degenne & Forse, 1999 p. 118), refers to the number of potential ties in a network. Density is the number of connections in a network compared to the maximum number of connections that are possible (Kilduff & Tsai, 2003). The higher the proportion, the denser the network is. That is, whether the individuals in the network only have one individual in common (sparse network) or whether they are also tied to each other (dense network). The sociograms in Figure 1 are examples of a sparse network and a dense network. The same numbers of people are present in each network, but in the sparse network, the individuals are not all connected to each other whereas in the dense network, all individuals are connected. Therefore, dense networks consist of more connections between members than sparse networks, however, the less dense a network is, the more potential for it to expand, allowing for more interaction with others outside of the network.

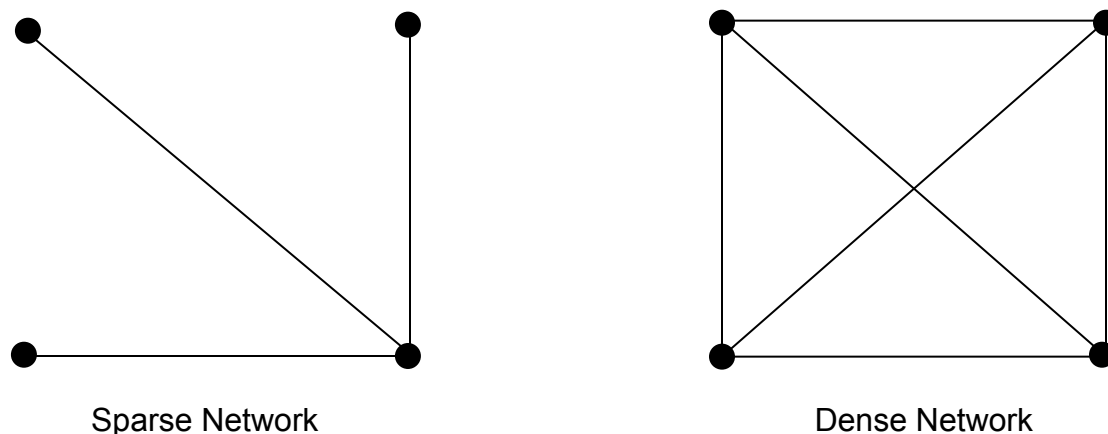


Figure 1. Network Density Diagrams.

Note: Nodes represent individuals and lines represent connections.

Less dense networks consist of individuals who have few contacts in common, or structural holes (Degenne & Forse, 1999; Kilduff & Tsai, 2003). Structural holes are gaps in the network, whereby there are no connections or direct links between network members (Burt, 1992). The absence of connections is an opportunity for a network member to bridge the gap, or play the role of a liaison by connecting two individuals, or in some cases, two groups of individuals. This notion is referred to as bridging (Kilduff & Tsai, 2003).

Similar to the concept of density, social networks have also been described in terms of tie strength (Granovetter, 1973, 1982). The strength of a tie is a function of the length of time the individuals have been connected, the emotional intensity of the interactions between them, the amount of mutual disclosure in which they engage, and the amount of reciprocity or exchange of resources between them (Granovetter, 1973; Specht, 1986). Strong ties are characterized by high degrees of closeness, indebtedness, and trust (Granovetter, 1973) and exist between people who have intimate relationships, such as family and friends. Strong ties are also characterized by multiplex exchanges or exchanges of several resources (Granovetter, 1973; Granovetter, 1982). For instance, ties between family members and friends can involve exchanges such as love and finances. Contrary to strong ties, weak ties describe relationships between individuals who are acquaintances. Weak ties are associated with uniplex exchanges or exchanges of only one resource, such as job related information (Granovetter, 1973; Granovetter, 1982; Korpi, 2001). These components of social networks (density and tie strength) provide the foundation for understanding social capital theory.

Development of Social Capital Theory

The notion of capital was first postulated by Socialist Karl Marx (1933/1976). In his view, capital is the surplus value that remains for those who control production, also referred to as “capitalists.” Marx also conceptualized capital as the process of investing with expected returns. Therefore, the investment leads to surplus which in turn allows for more investment and even more surplus. Marx’s theory is referred to as the classical theory of capital (Lin, 1999a), because its conception has led to several other theories of capital, including human capital theory (Johnson, 1960) and social capital theory (Bourdieu, 1985). The more recent developments in theories of capital differ from that of Marx because in the newer theories, the masses, rather than the bourgeoisie, make the investments to acquire capital (Lin, 1999a).

Social capital was first discussed in 1916, but it became popular among scholars in the 1980’s (Lin, 2001). Many scholars who theorized about social capital have offered a variety of definitions for the term (Bourdieu, 1985; Lin, 1999a, Burt, 1992; Coleman, 1988). Bourdieu (1985) made the first systematic attempt, referring to it as the “aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition” (p. 248). Bourdieu’s definition can be broken down into two parts: the relationships that allow people to access resources via their acquaintances, and the amount and quality of the resources they obtain. Since then, similar definitions have been offered. For instance, Lin (1999a) defines social capital as “resources embedded in a social structure which are accessed and/or mobilized in purposive actions” (p. 35). Drawing on Lin’s concept, Coleman (1990) refers to social capital as a set of social

resources. Defining social capital is a difficult task and some experts agree that no simple definition exists (Devine & Roberts, 2003; King, 2004; Leonard, 2004; Schuller, 2001; van Deth, 2003), but the premise behind it is rather straightforward: social capital is the ability to secure benefits as a result of one's membership in social networks (Portes, 1998). Therefore, social capital refers to the resources one may access through social network ties.

Theory Application

The concept of social capital has been applied in a variety of fields including sociology, psychology, social work, economics, political science, public policy, community development, management, marketing; anthropology, geography, human resource development and organizational development (Bourdieu 1985; Erickson & Jacoby, 2003; Gant, Ichniowski & Shaw, 2002; Granovetter, 1973; Granovetter, 1982; Hatala, 2006; Gubbins & Garavan, 2005; Inkpen & Tsang, 2005; Lein, 1983; Lin, 1999b; Mohan & Mohan, 2002; Putnam, 1993; Rindfleisch & Moorman, 2001; Specht, 1986; Schuller, 2001; Syman, 2000; van Deth, 2003). Scholars in such fields have described social capital from the viewpoints of their own respective disciplines. For instance, Bourdieu (1985) views social capital as convertible into economic capital and Loury (1977; 1981) and Coleman (1988) view it as a means for acquiring educational credentials. Putnam (2000) takes a political science perspective and views social capital as the relationships within a community that are necessary for fostering the development of civic trust in political institutions. Thus, social capital, like social networks, can be viewed as a characteristic of individuals, as well as organizations, communities, and nations (Portes, 2000).

Social Network Components and Social Capital

Social capital is often assessed through social network analysis. The structural properties of a social network are indicative of the amount of social capital one possesses. The network structure (i.e. the network ties, density, and structural holes) facilitates, or in some cases hinders, one's access to resources. There is an ongoing debate about which ties, weak or strong, are more valuable for the acquisition of resources. This has led to two streams of thought in social network research: the weak tie hypothesis and the strong tie hypothesis (Granovetter, 1973, 1982). The original argument was posed by Granovetter (1973) who wrote about the "strength of weak ties" (p.1360). According to Granovetter, weak ties were believed to be more powerful than strong ties in terms of the flow or transmission of information. The argument is based on the principle that dense networks are characterized by more strong ties. These dense, strong tie networks possess a high degree of redundancy in the amount of information possessed by network members. Therefore, there is little opportunity for diverse information to be obtained from individuals who share the same sources of information. On the contrary, weak ties eliminate the overlap, by bridging individuals to other groups where they can access new information (Granovetter, 1973, 1982). Thus, it is the weak ties that are more often associated with the notion of social capital.

Consider a circle of close knit friends in an individual's (referred to as "ego" in social network research) network, all of whom know each other well. There is a high degree of overlapping information in such friendship circles because all members are circulating similar information back and forth to each member in the network. Now consider the mere acquaintances, or weak ties, ego has. Each of the ego's weak ties has strong ties with certain individuals whom the ego does not know. The weak tie

serves as a bridge to connect ego to individuals he or she knows. Therefore, weak ties may be more powerful because they stand to link individuals to new information outside of their circle of friends. This notion has been demonstrated in a variety of contexts (Korpi, 2001). In particular, studies on job seeking have found that individuals who rely on weak ties to find jobs may be more likely to increase their occupational statuses by doing so (Granovetter, 1982; Lin, 1999b; Hatala, 2003). On the contrary, the use of strong ties to obtain employment is more often used by those in nonprofessional positions, or the poorly educated (Ericksen & Yancey in Granovetter, 1982; Korpi, 2001).

In his later work, Granovetter (1982) revisited his weak tie hypothesis and articulated the notion of “the strength of strong ties” (p.113). Though his previous work focused on the need to use contacts outside of the social circle, Granovetter noted that the importance of strong ties had been understated. The strong tie hypothesis argues that strong ties may be more valuable for the acquisition of resources, depending on the situation and the context (Granovetter, 1982; Korpi, 2001; Lin, 1999b). For instance, Granovetter argued that strong ties may be more easily available and more likely to be drawn upon in difficult times. For instance, in times of financial hardship, or when the need for emotional support is high, individuals may be more likely to consult strong ties for support.

Research that followed Granovetter’s work (1973, 1982) has resulted in some mixed support for the weak tie hypothesis (Bridges & Villemez, 1986; Gant, Ichniowski, & Shaw, 2002; Seibert, Kraimer & Liden, 2001). For instance, strong ties may be valuable in terms of new learning and the transfer of knowledge in organizational settings (Inkpen & Tsang, 2005; Kale, Singh, & Perlmutter, 2000; Rindfleisch &

Moorman, 2001). Also, Gant et al. (2002) support in a study of information transfer among employees, that those with dense, strong tie networks demonstrated a better flow of communication and transfer than employees with less dense networks. This finding is consistent with Coleman's (1990) view that dense networks with strong ties result in more trust, which improves communication and information sharing among network members. Therefore, according to Coleman's view of social capital, it is the strong ties, rather than weak ties, that create social capital. This view is consistent with Granovetter's strong tie hypothesis, Adler and Kwon's (2002) internal social capital, and Gargiulo and Benassi's (2000) notion of safe networks.

Lin (1999a) offers an explanation for the mixed support for the weak tie hypothesis. Lin argues that whether dense networks of strong ties (also known as closed networks) or whether networks of weak ties (also known as open networks) have more value is dependent upon the outcomes of interest. If one's goal is to maintain resources (i.e. expressive actions), then closed networks may have the relative advantage. In such a situation, a closed network may be advantageous because resources that already exist within the network may be preserved and reproduced. However, if an individual's goal is to search for and obtain resources that do not already exist within the network (i.e. instrumental actions), such as searching for a job, then an open network which allows individuals to access weak ties would be more useful. In an empirical study on the role of weak ties in career success, Seibert, Kraimer, and Liden (2001) found that strong ties are more likely to provide continued assistance and information to network members. The researchers then concluded that while it may be beneficial to develop weak ties to gain access to resources, individuals should invest in

strengthening those ties to continue to receive assistance from them.

Despite the mixed support for the weak tie versus strong tie argument, it is generally accepted that strong ties provide access to sensitive information whereas weak ties provide access to more diverse information (Korpi, 2001; Rindfleisch & Moorman, 2001). The diversity of information in weak ties is consistent with the structural hole concept in that it affords individuals with access to resources not available within their innermost circle of friends (Degenne & Forse, 1999).

Social Resources and Social Capital

Social resource theory is the notion that resources are embedded within social networks (Lin, 1982). While social resources theory developed independent of social capital theory, it complements social capital and is often referenced in explanations of the theory (Lin, 1999b). Lin (1999b) notes that social capital refers to the resources accessed in social networks and the instrumentality of those resources. Social resources differ from personal resources, which are already possessed by an individual who can use, dispense, and dispose of them at will because social resources are those that an individual can access by virtue of his or her direct or indirect ties (Lin, 1999b). According to Lin (1999a), individuals invest in relationships with the expectation that resources will be obtained. These resources are temporary and borrowed and though they are used to help ego achieve his or her goal, they remain the property of the network contact (Lin, 1999a). For instance, a network contact's status, occupational level, or friendship with someone else who is in a position of power are all examples of resources which ego can draw upon to achieve a goal (Lin, 1999b).

Unlike social network components which focus on relationships between individuals and the overall structure of the network, such as tie strength and structural

holes, social resources theory focuses on the characteristics of the members themselves and the content of the network (Seibert et al., 2001). The theory focuses on the amount of the resources that network members possess or control (Lin, 1999a). Such resources can be tangible (e.g. money) or intangible (e.g. information) and they can be categorized as network resources or contact resources. Network resources are those that exist within an individual's network which are accessible (Lin, 1999a). Contact resources, however, are those which are embedded within one's contacts and serve to help others obtain resources (Lin, 1999a). For instance, the wealth, power, and status of someone who is a friend of a friend are all examples of contact resources.

Some argue that social resources theory outweighs tie strength hypotheses and structural hole theory (Seibert et al., 2001). That is, regardless of tie strength or an individual's position within the network, the ability to acquire embedded resources is the most important concept. However, it can also be argued that these three concepts may not be mutually exclusive (Seibert et al., 2001). That is, social resources, tie strength and structural holes may function together as they each account for different pieces in the puzzle for the accumulation of social capital. The construct of social capital is best conceptualized as a combination of network structures which facilitate or hinder access to social resources as well as the resources themselves that are embedded within the network (Lin, 1999a; Seibert et al., 2001).

Benefits of Social Capital

Because of the variety of resources that one can acquire by virtue of network contacts, studies have assessed the outcomes of social capital. Several benefits to individuals and organizations have been identified. In general, social capital is used for goal attainment, as individuals develop relationships through networking in order to

acquire resources needed to achieve their goals (Inkeles, 2000; Lin, 1999a). When viewed from an organizational perspective, social capital is believed to increase organizational performance by resulting in the acquisition of information, ideas, opportunities for advancement, emotional support, and cooperation (Akdere, 2005; Sandefur & Laumann, 1998). The resources acquired through individuals networks are positively related to salary, the number of promotions in one's career, and satisfaction with one's career (Seibert et al., 2001).

In keeping with the potential benefits to organizational members, Lin (1999a) notes four benefits of social capital: information, influence, social credentials, and reinforcement. First, social capital facilitates the information flow by providing individuals in certain locations in the network with information about opportunities that would otherwise not be available. Social capital can also increase the likelihood that an individual will be recognized by an organization in order to improve recruitment and to help individuals find better jobs. Second, social capital can be used to influence individuals who are decision makers (as in hiring and promotions), because some ties in certain positions may be able to exert more power, such as through "putting in a good word" to decision makers. Third, ties to individuals who exert power can add to an actor's social credentials, which are a reflection of the actor's ability to secure resources. Finally, an actor's social contacts reinforce one's self-worth as it serves as a public acknowledgement of the individual's membership in a social group and the individual's ability to access resources. Reinforcement of self-worth is essential to the maintenance of one's mental health (Lin, 1999a). Based on previous studies, King (2004) included solidarity, the act of bringing people together to achieve a common goal, as another benefit of social capital. Therefore, social capital's benefits to

individuals include greater visibility, timely access to information, greater access to material resources, enhanced probability of success in job searches, improved social interaction, credibility, and improved personal health (Granovetter, 1973; Mohan & Mohan, 2002; Seibert et al., 2001).

Building Social Capital

Given the many benefits associated with social capital, there is recent interest in understanding the nature of investing in or building social capital. It has been noted that people invest in social capital because of a desire to maintain resources or to acquire new resources (Lin, 1999a). Social capital should be viewed as a resource itself, that can appreciate over time, or depreciate when it is not used or when one abuses the access to resources (Adler & Kwon, 2002; King, 2004). Therefore, it is necessary to identify the conditions upon which individuals are able to invest in and maintain their stock in social capital.

Adler and Kwon (2002) identify three prerequisites for developing social capital: ability, motivation, and opportunity. Ability refers to competence in developing relationships with others, such as through networking. Studies have supported that social skills (Baron & Markman, 2000) and extraversion (Forret & Daugherty, 2001), play a role in an individual's development of social capital. In particular, Forret and Daugherty (2001) found that for managers, self-esteem and extroversion significantly predicted networking activities such as engaging in professional activities. King (2004) concludes that organizations should develop social capital by incorporating social capital theory and networking skills into training and development curricula.

The variable of opportunity reflects the differing amounts of social, political, and financial positions people occupy in society. Lin (1999b) has found a relationship

between status and social capital. In an organizational setting, status, organizational structure, proximity, and time all have the potential to affect the opportunities for networking and developing social capital (Yukl, 1998). It has been stated that by allowing people opportunities to meet and network with others, such as by allowing individuals time to interact in the workplace, organizations can help create opportunities for people to build social capital (Cohen & Prusak, 2001). Also, the characteristics of one's network also serve to create or inhibit opportunities for developing social capital. For instance, tie strength and density play a role in an individual's opportunities to network with new individuals (Adler & Kwon, 2002).

Finally, motivation plays a role in the development of social capital (Adler & Kwon, 2002). Individuals investing in social capital must believe that the outcomes of their networking behavior will be worthwhile. Some individuals are motivated to achieve goals and they view social capital as a means to reaching them (Burt, 1992). Different goals will result in different strategies to achieve social capital.

Measuring Social Capital

Researchers are unable to reach consensus on how best to measure social capital because no agreed upon definition exists (Devine & Roberts, 2003; Krishna & Shrader, 1999; Schuller, 2001; van Deth, 2003). Without a clear definition, attempts to operationalize it are difficult, which in turn presents additional obstacles to measurement (van Deth, 2003); however, according to King (2004), the diversity in meaning and application of social capital presents endless opportunities for research. The key to success in measurement is for the researcher to "conceptualize and operationalize [the outcomes of social capital] in a meaningful and scholarly way" (King, 2004 p. 482). The term must be made explicit by those who attempt to measure it in order to collect

meaningful data. Attempts to measure social capital are highly dependent upon the context in which it is studied (Schuller, 2001; van Deth, 2003). As a result of the different contexts in which social capital has been applied, there are many methods for measuring social capital and researchers select the approach that best fits both the context and the definition that serves as the framework for their studies (van Deth, 2003).

Social capital researchers have offered a variety of approaches to measurement, but there is a divide when it comes to the selection of quantitative over qualitative approaches. Some social capital researchers advocate the use of qualitative approaches (Devine & Roberts, 2003; van Deth, 2003). For instance, Devine and Roberts (2003) remind researchers of the benefits of qualitative research when studying an abstract concept such as social capital. The researchers state that “qualitative analysis can help reveal the complexities of social capital in day-to-day life” (Devine & Roberts, 2003 p. 97). Van Deth proposes a “multi-level, multi-method approach” which includes the use of more than one research method, and multiple items, rather than just relying on one indicator of social capital, such as tie strength or density. While interviewing techniques are sometimes used, the majority of studies assessing individual social capital utilize survey methods and quantitative techniques (van Deth, 2003). Coleman (1990) is one of many researchers who argue that the nature of social capital makes it difficult to measure quantitatively, however, he advocates using qualitative approaches to collect data while analyzing it quantitatively. Regardless of the data collection approach selected, both qualitative and quantitative methods have been used by researchers to conduct social network analyses. Social network analysis is the technique most often used to assess social capital.

Social network analysis (SNA) is the study of the interaction of a group of people and their ties to others (Hatala, 2006). SNA involves techniques to identify linkages between members in a social network and the characteristics of the relationships between them. One technique is a complete network analysis, which involves obtaining all the relationships between a set of actors (Hatala, 2006). Lin (1999a) referred to this complete mapping of a network as a “saturation survey” (p. 38). The second technique is as an ego network analysis, which utilizes a traditional survey to map the relationships within one individual’s network (Hatala, 2006). These techniques allow for the integration of traditional quantitative data, qualitative data, and graphical data (Kilduff & Tsai, 2003). According to Kilduff and Tsai (2003) qualitative approaches to SNA allow researchers to stay close to their data, by going beyond just the mean differences between groups, and by analyzing the patterns of communication and conversations between individuals. Graphical data allows for a visual depiction of these network ties. For instance, sociograms, or diagrams of geometric shapes depicting the relationships and the positions of actors, are often used to illustrate the network structure. Thus the qualitative and graphical data add a degree of realism to the quantitative summaries typically provided in scholarly publications (Kilduff & Tsai, 2003).

SNA is used to assess social capital by focusing on network locations (Lin, 1999a). The network locations approach to measuring social capital identifies bridges of structural holes, as well as other network characteristics related to social capital such as density, tie strength, and degree of openness of the network. The arguments for tie strength, presented by Granovetter (1973; 1982), and for structural holes, presented by Burt (1992), are then applied to the relationships examined within the network. For instance, those with weak ties or those who are in a position to bridge a structural hole

would possess more social capital. It should be noted, however, that reliance on just network structure as an indicator of social capital can be risky without clear theoretical arguments to justify their use (Lin, 1999a).

Another approach to assessing social capital is by determining the resources obtained through network ties. The embedded resources approach to measurement uses the resources of others (i.e. social resources) accessed by an individual within his/her network and ties (Lin, 1999a). The embedded resources approach identifies two types of resources: network resources and contact resources. Network resources are the resources that exist within the network that an individual is able to access. Contact resources refer to the occupations, authorities, and statuses of contacts. Both network and contact resources contribute to the outcome of instrumental actions (Lin, 1999a, 1999b).

Three methods are often used to measure the resources that are embedded within the network: the name generator technique, the position generator technique, and the resource generator technique (Van Der Gaag & Snijders, 2003). The name generator approach to measurement is the oldest and more commonly used of the three (Lin, 1999b). The technique involves asking an individual to identify a list of names of contacts. Next, the relationships between the individual and his/her contacts and the characteristics of the contacts are obtained. Social capital is then determined according to the range and diversity of resources available among the contacts. An advantage of this approach is that specific relationships (e.g. family, work) and content areas (e.g. job-related issues, household issues) can be identified. Lin (1999a; 1999b), however, cites the disadvantages of using the name generator approach. First, there is much

variation for the number of names identified, which can affect the amount of social capital measured, and second, there is a bias toward including stronger ties.

Because of the shortcomings of the name generator approach, Lin and Dumin (1986) created the position generator technique. With this technique, individuals are provided with a list of salient positions (e.g. jobs, occupations, class, and status) and are asked to indicate the names of contacts, if any, in the positions listed. Rather than listing all contacts for a given position, individuals are instructed to indicate the names of the person in the position that they have known the longest. Through the use of additional questions, the nature of the relationships with the individuals can be identified. Rather than being content or role specific, the position generator approach measures the access to positions in a hierarchy. Social capital is assessed through tie strength with individuals in certain positions that are deemed more prestigious than others (Flap, Snijders, Volker & van der Gaag, 2003). A disadvantage of the position generator approach is that it generates little or no specific information (Flap et al., 2003). Also, the instrument is more suitable for inquiries about instrumental actions, rather than expressive actions.

The resource generator summary is yet another technique to identify embedded resources (Snijders, 1999). The resource generator technique allows one to overcome the disadvantages associated with both the name and position generator techniques by incorporating the advantages of both of them into one instrument (Flap et al., 2003). The format for the instrument consists of a structure that is similar to the position generator. Rather than listing only positions, the resource generator uses resources from several contexts that represent social capital. Individuals then indicate the ties to these resources and the strength of those ties. The advantages of the resource

generator approach include rapid administration, multiple indicators, and ease in interpreting social capital (Flap et al., 2003).

Though standardization is difficult to achieve due to the contextual dependency of social capital, some instruments have been developed to measure individual social capital. For example, Forret and Daugherty (2001) developed a networking behaviors scale to identify networking behaviors of managers. The scale consists of thirty-one items and measures networking in several categories: maintaining contacts; socializing; participation in professional, church, and community activities; and increasing visibility within their organizations. Brass and Krackhardt (1999) have developed an approach to help managers assess their own social capital by identifying individuals in positions of power within their organizations and using a simple scoring system based on whether they are directly or indirectly tied to them.

Researchers who have measured social capital in an organizational setting have used the variety of approaches outlined above. Because an organizational setting is a specific context, questions are typically framed around the work setting. For instance, in a study on social capital and organizational change, the number of direct ties to other workers and tie strength were used as indicators of social capital (Gant et al., 2002). Respondents were given the names of several coworkers and were asked to indicate frequency of contact as a measure of tie strength. Strong ties were identified through contacts that occurred daily or weekly, and weak ties were those occurring monthly or less often (Gant et al., 2002).

Siebert and associates (2001) also assessed social capital through tie strength, but used a more detailed approach. The researchers incorporated social resources and network structure into their conceptualization of social capital. Individuals were asked to

provide the initials of “people who have acted to help your career by speaking on your behalf, providing you with information, career opportunities, advice or psychological support or with whom you have regularly spoken regarding difficulties at work, alternative job opportunities, or long-term career goals” (p. 16). Next, they were asked to provide detail about five indicators of social capital: network size, organizational function, organizational level, tie strength, and the presence of structural holes. The authors’ selection of variables was based on existing literature on three theoretical approaches to social capital: the strength of weak ties (Granovetter, 1973), the structural holes theory (Burt, 1992), and the social resources theory (Lin, 1999a). Network size was determined by the number of individuals listed by the respondent as people who have acted to advise or help one’s career. The organizational function and organizational level variables were included based on the notion that in intra-organizational networks there are social boundaries between contacts at higher levels and in other functions, and those who are considered lower in status. This is consistent with Lin’s (1999b) argument that certain positions (i.e. higher levels) often have valued resources attached to them. Finally, tie strength was assessed according to the degree of closeness felt to the contact. The number of weak ties identified was indicative of the access to social resources, and a formula was used to determine the presence of structural holes (Siebert et al., 2001).

There are several advantages to Seibert and associates’ approach to measuring social capital. First, the strong theoretical base justifies the inclusion of the multiple variables by incorporating three different theoretical approaches to measuring social capital: tie strength, structural holes theory, and social resources theory. In doing so, the study incorporates a multi-level approach advocated by van Deth (2003), rather than

relying on a single indicator of social capital. Finally, the survey was pre-tested with a large number of individuals prior to administration to ensure reliability.

Social Capital and Human Capital

Human capital refers to the knowledge, skills, and abilities (KSAs) that exist within individuals. Human capital enables individuals to increase productivity and earnings, which in turn improves the productivity of the organizations in which they work and the societies in which they live (Schuller, 2001). Human resource development (HRD) professionals seek to build this form of capital through a variety of professional development activities in order to improve performance. According to Hatala (2006), in dealing with human capital, HRD professionals must look beyond the individual and examine the relationships between individuals that impact performance. Therefore, social capital theory has important implications for human capital and the field of human resource development (Akdere, 2005).

The conceptualization of the relationship between social capital and human capital can be traced back to the work of Coleman (1988), an educational sociologist, in the latter years of his life. Coleman (1988) described social capital as instrumental in the creation of human capital. When viewed within the context of social capital, human capital refers to the use of personal contacts to acquire knowledge, skills, abilities, and expertise to improve performance. Thus the resources one acquires from network contacts lead to the acquisition of KSAs. In the case of human capital, the resources refer to the information and knowledge possessed by network members.

The potential to acquire knowledge, skills, and abilities from one's network contacts has been supported (Coleman, 1988; Inkpen & Tsang, 2005; Nahapiet & Ghoshal, 1998). For instance, Coleman (1988) studied the creation of human capital

within the family structure. He found that parents' educational levels had no impact on their children's human capital unless it was complemented by social capital. Parents who did not interact with their children were less likely to pass their knowledge down to them. Therefore, there must be social capital, in the form of strong relations and frequent interactions between parent and child, in order for the parent to provide access to his or her human capital to the child. While Coleman's work focused on childhood educational experiences, other studies have focused on the role of social capital in the learning experiences of adults (Inkpen & Tsang, 2005). For example, Inkpen and Tsang (2005) found that social capital is instrumental in the transfer of knowledge among social ties in organizational settings.

Lin (1999b) views the relationship between social capital and human capital as bi-directional. That is, while Lin agrees with Coleman that social capital helps to create human capital, he also believes that in some cases human capital can induce social capital. Lin reasons that individuals who are better educated and trained are well connected in social circles that are rich in resources. As a result of their human capital, they have access to resources that might not be available otherwise. Thus, because of their human capital, opportunities to acquire social capital are present. Lin's view is shared by others who believe that social capital can complement, be combined, or converted into other forms of capital to achieve desired outcomes (King, 2004; Schuller, 2001).

Summary

There is an increasing demand for workers to enhance their knowledge, skills, and abilities in order for organizations to remain competitive. Numerous studies have been conducted to examine professional development activities in the past decade

(Lohman, 2000, 2005; Lohman & Woolf, 2001; National Center for Education Statistics, 2005a, 2005b; Warr & Birdi, 1998). However, more information is needed to explain why individuals participate in professional development activities and few studies have examined how characteristics of the worker and the work environment influence participation in informal workplace learning. The role of an individual's social contacts in one's participation in professional development activities is in need of exploration (Hatala, 2006).

It has been supported that an individual can acquire human capital, or knowledge, skills, and abilities through his or her social contacts (Inkpen & Tsang, 2005; Nahapiet & Ghoshal, 1998). Human resource development (HRD) researchers have stressed the need to examine the process through which individuals develop human capital through the lens of social capital theory (Akdere, 2005; Hatala, 2006). Therefore, this study has important implications for HRD research and practice. This study will help to bridge a gap in HRD literature by increasing the understanding of the nature of the role of social capital in participation in professional development. HRD professionals and organizational leaders can apply the findings to improve on marketing professional development activities by emphasizing the benefits of networking to acquire KSAs. Additionally, HRD professionals and organizational leaders can improve on employee development plans by including relationship-building to increase network contacts in order to support learning.

CHAPTER 3

METHODOLOGY

The primary purpose of this study was to determine if a relationship exists between level of social capital and the extent of participation in professional development activities for professional employees of a profit-based organization located in the Southeastern United States. In this chapter, the methods used by the researcher are described. The study was designed as a correlational study utilizing survey methodology. Approval to conduct this study was obtained from the Louisiana State University Institutional Review Board (IRB# 3374) and the organization of interest. In the sections that follow, the population/sample, instrumentation and data collection, and data analyses are discussed.

Sample

The target population for this study was professional employees of a profit-based organization located in the Southeastern United States. Professional employees are defined by the company as overtime exempt employees or corporate staff as opposed to wage staff. The corporation provides engineering, fabrication, environmental, and industrial services to private, non-profit and public sector entities around the world. The corporation has several other locations in the United States and abroad, and a total of 21,000 employees. The employees were randomly selected from the Southeastern United States headquarters.

Using Cochran's (1977) sample size determination formula for continuous data, based on the definable range of scores on the social capital variable, where $t = t$ value for the selected alpha level of .05; $s =$ estimate of the population variance; and $d =$

acceptable margin of error, the minimum sample size required for the returned sample was calculated as follows:

$$\begin{aligned}
 n_o &= \frac{(t)^2 * (s)^2}{(d)^2} \\
 n_o &= \frac{(1.96)^2 * (50)^2}{(9)^2} \\
 n_o &= \frac{3.8416 (2500)}{81} \\
 n_o &= \frac{9604}{81} = 119
 \end{aligned}$$

Based on Cochran's formula, the minimum returned sample size for the study was originally determined to be 119.

The researcher obtained a list from the company's human resource department which identified 658 employees in the target population. Three individuals were removed from the accessible population, because they facilitated the study by giving approval to conduct the study, or by serving on the validation/pilot panel, bringing the accessible population to 655. Because 119 exceeded more than 5% of the accessible population ($119/655 = 18\%$), a small population correction formula was calculated, where population = 655; n_o = required returned sample based on Cochran's formula; and n = corrected required returned sample. Therefore, the minimum required returned sample was calculated as follows:

$$n = \frac{n_o}{1 + \frac{(n_o)}{(population)}}$$

$$n = \frac{119}{1 + \frac{(119)}{(655)}}$$

$$n = \frac{119}{1 + .182}$$

$$n = \frac{119}{1.182}$$

$$n = 101$$

It was determined that the corrected minimum returned sample size for a population of 655 would be 101. According to Dillman (2000), the Total Design Method yields a response rate of 70%. However, the study organization warned the researcher that previous surveys conducted with the same population (though not using the Total Design Method) had yielded low response rates at or below 30%. Therefore the researcher decided that 500 participants would be selected from the accessible population of 655. This number was selected based on an anticipated response rate of 48%.

The random selection process took place in two phases. In the first phase, 500 people were randomly selected from the 655 employees (658 minus the three individuals who facilitated the study). Of the 500 selected, 66 were determined to be frame errors because they were no longer working in the geographic location of interest. In the second phase, 75 additional people were randomly selected from the list of employees, and 31 were determined to be frame errors. In all, 97 people selected for the study were frame errors. After adjusting for the frame errors, the accessible population was determined to be 558 and 478 people received the survey. The adjustment to the population from 655 to 558 called for a re-calculation of the minimum

requirement for completed surveys. Therefore, the final calculation for the minimum required usable sample was 99.

Instrumentation and Data Collection

Data was collected via a survey containing three sections: demographic information, amount of participation in professional development activities, and a measure for social capital. According to research on survey design, respondents are more likely to skip sections of the survey that are included at the end of the survey (Dillman, 1991). Therefore, in order to increase response rates to the parts of the instrument containing the principle variables of interest (social capital and participation in professional development activities), the demographic portion appeared in the last section of the survey.

Demographic Variables

Based on previous studies conducted on participation in professional development, demographic variables were drawn from the following categories: gender, age, ethnicity (Lohman, 2005; National Center for Education Statistics, 2005a; National Center for Education Statistics, 2005b), highest level of education completed, and job level (Lohman, 2005). In addition to those characteristics most often studied, the researcher also determined years of professional experience, years of experience with the current employer, and the number of professional memberships currently held that were directly related to the job (i.e. in one's field) and that were not directly related to the job (e.g. toastmasters/toastmistress). Demographic categories selected for inclusion in the survey were drawn from literature on participation in adult education activities (National Center for Education Statistics, 2005a).

Participation in Professional Development Variables

Some of the participation variables were drawn from the literature on participation in workplace learning activities (Lohman, 2005). The remaining variables were derived from the researcher's knowledge of professional development activities. Participants were asked to indicate the number of times they participated in the mandatory and voluntary professional development activities listed within the previous 12 months: internal training, external training that is reimbursed by the employer, external training that is not reimbursed by the employer, college courses paid for by the employer, college courses not paid for by the employer, and self-initiated learning activities. In addition to the categories listed, an open ended section appeared on this section of the instrument to allow respondents to indicate other work-related learning activities which were not identified on the instrument.

Social Capital Variables

The social capital measure was developed from existing literature on social network analysis and its application in identifying social capital (Gant et al., 2002; Hatala, 2003; Hatala, 2006; Seibert et al., 2001). This portion of the survey consisted of an ego analysis, whereby standard survey items were presented to individuals to assess their number of network contacts as an indicator of social capital. The instrumentation design was based on Seibert and associates' (2001) technique for measuring social capital. The researchers incorporated social resources and network structure into their conceptualization of social capital. Respondents to Seibert and associates' instrument were asked to provide the initials of "people who have acted to help your career by speaking on your behalf, providing you with information, career opportunities, advice or psychological support or with whom you have regularly spoken

regarding difficulties at work, alternative job opportunities, or long-term career goals” (p. 16).

Respondents to Seibert and associates’ instrument were then asked to provide detail about five indicators of social capital: network size, organizational function, organizational level, tie strength, and the presence of structural holes. The authors’ selection of variables was based on existing literature on three theoretical approaches to social capital: the strength of weak ties (Granovetter, 1973), structural holes theory (Burt, 1992), and social resources theory (Lin, 1999a). Tie strength refers to the degree of closeness or frequency of contact to an individual, structural holes refer to gaps in the network where there are no connections or direct links between network members, and social resources are the resources embedded in a social network. Network size was determined by the number of individuals listed by the respondent as people who have acted to advise or help one’s career. The organizational function and organizational level variables were included based on the notion that in intra-organizational networks there are social boundaries between contacts at higher levels and in other functions, and those who are considered lower in status. This is consistent with Lin’s (1999b) argument that certain positions (i.e. higher levels) often have valued resources attached to them. Finally, tie strength was assessed according to the degree of closeness felt to the contact. The number of weak ties identified was indicative of the access to social resources, and a formula was used to determine the presence of structural holes. The strength of this approach to measuring social capital is that it is based on three theoretical approaches to assessing social capital: tie strength, structural holes and social resources. In doing so, Seibert and associates’ approach to measurement takes a multi-level approach rather than just relying on a single indicator of social capital.

The present study consisted of three contextual questions regarding the access to resources to determine levels of social capital: 1) List (by initials) up to 10 people you have contacted throughout your career when you needed help advancing in your career; 2) List (by initials) up to 10 people who have contacted you throughout the course of your career for help with advancing in their careers; 3) List (by initials) up to 10 people you have contacted throughout your career to refer you to other individuals who could help you advance in your career. The first question was designed to identify a respondent's ability to access resources, the second was designed to identify the respondent's level of resourcefulness to others, and the third assessed the presence of structural holes and the respondent's ability to access resources from those individuals who bridge them. According to Lin (1999b), contextual questions typically generate anywhere from five to as many contacts as the ego can volunteer. In a study conducted by Van Der Gaag & Snijders (2003), the maximum number of contacts listed for an item on a name generator item was 14, with an average of seven. Therefore, the number ten was selected as the maximum number of contacts to be generated for each of the contextual items on the questionnaire used in this study.

For each contextual question related to social capital, five indicators were assessed: network size, contact's employment, contact's work setting, contact's position within the organization, and the frequency of interaction with the contact. Similar to Seibert and associates' (2001) study, each of the indicators is rooted in existing literature on the structural components of social capital. Network size was determined by the number of contacts each respondent identified. The contact's employment was designed to identify whether a contact worked within or outside of the organization. If a respondent indicated that the contact worked within the organization a value of one was

added and if the respondent indicated that the contact did not work within the organization a value of two was added. If a respondent indicated that the contact did not work within the organization, then they were instructed to skip to the variable of frequency of interaction (1 = daily; 2 = weekly; 3 = monthly; 4 = quarterly; 5 = yearly or less). The frequency of interaction indicator was based on a study conducted by Gant and associates (2002). For the present study, if a respondent indicated the frequency of contact was daily, the respondent received a value of one. Weekly contact resulted in a value of two, monthly contact resulted in a value of three, quarterly contact resulted in a value four, and yearly contact resulted in a value of five. The rationale for including this variable is consistent with the weak tie hypothesis. For instance, if a contact was outside of the organization, and interaction was infrequent, then the information obtained from this contact should have been less redundant with the information that already existed among one's strong ties.

Regarding work setting, if the contact worked within the organization, respondents were asked to indicate whether the respondent worked inside of one's department (to receive a value one) or outside of one's department (to receive a value of two). The notion, again, was that the information shared with those in the same department would be more redundant than the information obtained from those outside of the department. After responding to this item on the survey, respondents were asked to indicate the contact's position level within the organization (0 = lower than yourself; 1 = same as yourself; 2 = higher than yourself). For respondents who indicated that the contact's position was lower in comparison to their own, no points were added. If a respondent indicated that the contact's position level was the same as his/her own, a value of one was added, and if a respondent indicated that the contact's position level

was higher than his/her own, a value of two was added. According to Lin (1999b) certain position levels (i.e. those at higher levels according to an organization chart) may have more resources tied to them. After responding to this indicator, respondents were directed to provide information about the frequency of contact.

Instrument Validation

Survey items were drawn from existing literature and research on professional development activities (Lohman, 2005; National Center for Education Statistics, 2005a; National Center for Education Statistics, 2005b; Warr & Birdi, 1998). A panel of ten individuals was consulted in the development of the instrument and examined the instrument to determine content validity and to ensure clarity in instructions. The panel consisted of experts in the measurement of social capital and survey design, and individuals who were in similar positions in similar companies to the target population. After a careful review of the instructions and content for clarity and appropriateness, subject matter experts were asked to provide feedback to the researcher. After consideration of the feedback received, the researcher determined that minor revisions were needed and made the necessary adjustments. The surveys were printed on 11 inch by 17 inch canary yellow paper with a readable black font, which was folded in half to create an eight page stapled booklet. The cover of the booklet was the first page of the survey. Page seven thanked respondents and included mailing instructions and the researcher's contact information. The back page of the booklet, page eight, was left blank. The complete instrument used for this study is provided in Appendix A.

Survey Administration

The survey was administered according to Dillman's Total Design Method (1972; 1991). A contact person within the organization was asked to send a brief pre-

notification memo to the drawn sample, informing them of the forthcoming surveys (see Appendix B). The researcher delivered the surveys to the organization, which were addressed to each individual in the drawn sample. The surveys were then distributed to the participants via the company's inner-office mail system. A cover letter (see Appendix C) printed on letterhead from the researcher's academic institution accompanied the instrument, and subjects were briefed on the nature of the study. The cover letter contained a brief introduction about the importance of the study, an explanation of why participation in the research was needed, instructions, a time estimate for completion of the instrument, a statement about confidentiality and coding procedures, a statement about the Louisiana State University Institutional Review Board, the protocol for returning the instrument (for those who wished to complete it or those who wished to be withdrawn from the study), and a closing with the researcher's contact information. A self-addressed, postage paid envelope was provided to enable respondents to return the surveys directly to the researcher. Each survey was coded to distinguish respondents from non-respondents.

Approximately one week after the initial delivery of the surveys to the organization, a postcard (see Appendix D) was mailed to non-respondents as a follow-up to thank those who had completed the survey and to remind those who had not yet done so to complete and return the survey. Approximately three weeks after the original delivery of the surveys, a second copy of the survey along with a follow-up cover letter (see Appendix E) reminding participants who had not returned the survey to do so. Six weeks after the initial delivery of the surveys, a second replacement survey with the same follow-up cover letter was sent to non-respondents.

In addition to replacement surveys, analyses were conducted to handle non-response error (Miller & Smith, 1983; Ary, Jacobs, & Razavieh, 2002). *T*-tests were conducted to determine if early respondents differed from late respondents on the demographic characteristics of age, years of experience in the current field, years of experience with the current employer, number of memberships in professional associations directly related to the job, and the number of memberships in professional associations indirectly related to the job. Early respondents were identified as those who responded within the first week, and later respondents were those who responded six weeks after the initial delivery of the surveys.

Prior to conducting the analysis, Levene's test of homogeneity of variances was conducted to compare the variances for early and late respondents on each variable. Equal variances were assumed to hold for each; therefore, the researcher was able to interpret the *t*-tests calculated with equal variances. *T*-tests revealed that there were no significant differences between early and late respondents on either of the continuous selected demographic variables at the a priori .05 level. Therefore, no direct evidence was found to suggest that the respondent group was not representative of the accessible population. The results of the *t*-tests are provided in Table 2.

Table 2

Comparisons of Early and Late Respondents to the Professional Development Survey on Selected Demographic Characteristics

Demographic Variable	<i>df</i>	<i>t</i>	<i>p</i>
Age	58	-.072	.943
Experience in Field	59	.225	.822
Experience with Employer	59	-.229	.819

(Table continued)

Professional Associations Directly Related to Job	59	-.290	.773
Professional Associations Indirectly Related to Job	59	-.213	.832

^aEqual variances were assumed for each of the analyses of the demographic variables.

Data Analyses

In addition to the comparison *t*-tests, the data collected in this study was analyzed as described below according to each research objective. For all inferential statistical tests, the alpha level was set a priori at .05. The statistical package SPSS (Statistical Package for the Social Sciences), version 13.0 was used to run and analyze all data.

Objective One

The first objective was to describe the research participants on the following selected demographic characteristics:

- A. Gender
- B. Age
- C. Ethnicity
- D. Years of professional experience in current field
- E. Years of experience with the current employer
- F. Job level
- G. Highest level of education completed
- H. Number of memberships in professional associations
 - 1. Directly related to the job (e.g. in one's field)

2. Indirectly related to the job (e.g. toast masters or toastmistress)

This objective was descriptive; therefore, descriptive statistics were used to analyze the data. Means and frequencies were used to analyze the data obtained for this demographic information.

Objective Two

The second objective was to describe the extent of participation in the following categories of professional development activities in the last 12 months:

A. Mandatory Professional Development

1. Internal training (provided by the employer)
 - a. Individual/Self-paced(e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training)
2. External training (provided by a professional association) reimbursed by the employer
 - a. Individual/Self-paced learning activities (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training, conferences)
3. External training (provided by a professional association) *not* reimbursed by employer
 - a. Individual self-paced learning activities (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training, conferences)
4. College course(s) paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence,

computer-based training)

b. Group setting (e.g. traditional classroom-based)

5. College course(s) *not* paid for by the employer

a. Individual/self-paced (e.g. independent study, correspondence, computer-based)

b. Group setting (e.g. traditional classroom-based training)

6. Self-Initiated learning activities

7. Other mandatory work related learning activities as specified by the respondent

B. Voluntary Professional Development

1. Internal training (provided by the employer)

a. Individual/Self-paced (e.g. independent study, correspondence, computer-based training)

b. Group setting (e.g. traditional classroom-based training)

2. External training (provided by a professional association) reimbursed by the employer

a. Individual/Self-paced learning activities (e.g. independent study, correspondence, computer-based training)

b. Group setting (e.g. traditional classroom-based training, conferences)

3. External training (provided by a professional association) *not* reimbursed by employer

a. Individual self-paced learning activities (e.g. independent study, correspondence, computer-based training)

b. Group setting (e.g. traditional classroom-based training, conferences)

4. College course(s) paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based)
5. College course(s) *not* paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based)
6. Self-Initiated learning activities
7. Other mandatory work related learning activities as specified by the respondent

As with objective one, objective two was also descriptive. Means and standard deviations were used to analyze the extent of participation in each of the categories and subcategories listed.

Objective Three

The third objective was to determine levels of social capital. Lin (1999a) states that social capital is the combination of the size of one's network, the strength of the relationships (i.e. ties) between individuals, and the resources possessed by those in the network. Social network analysis is the primary means through which social capital is identified; therefore, a third section on the survey identified social capital according to structural components.

Three questions about the accessibility of resources and five indicators of social capital were used: network size, contact's employment, contact's work setting, contact's position within the organization, and the frequency of interaction with the contact.

Because the study asked respondents about relationships within and outside of the corporation, the researcher took a weak tie hypothesis perspective for frequency of interaction (Granovetter, 1973). The weak tie hypothesis perspective conceptualizes that infrequent contact (monthly or less often) results in less redundant information among network members and is more indicative of better social capital than relationships that are characterized by frequent contact (daily or weekly). Also, contacts that are outside of the organization and one's immediate department are typically more indicative of better social capital. Once the responses to this portion of the survey were obtained, they were scored by summing the number of contacts listed and the scores circled for each indicator across all three questions. A formula was created to determine each respondent's social capital score. The formula was based on theoretical concepts and is modeled after Hatala's (2003) formula where variables that did not add value to one's network were given negative points. Therefore, the formula for the present study was:

$$\text{Social capital} = \Sigma (\# \text{ of contacts} + \text{employment} + \text{work setting} + \text{position level} + \text{frequency of contact}) - \Sigma (\# \text{ contacts working for same organization} + \text{contacts working in same unit} + \text{position level lower than self} + \text{position level same as self} + \text{weekly frequency of contact} + \text{daily frequency of contact}).$$

Objective Four

The fourth objective was to determine if a relationship existed between levels of social capital and extent of participation in professional development activities. To meet this objective, data obtained from objectives two and three were correlated in order to determine if a relationship existed between the two variables. First, Pearson's product moment correlation was used to determine if a relationship existed between the broad

categories of voluntary and mandatory activities and levels of social capital. Each category (mandatory and voluntary) was correlated with the social capital scores. Next, each category and sub-category under the headings of mandatory and voluntary participation was paired with social capital scores and analyzed using Pearson's Product Moment Correlation. In addition, categories were grouped according to group versus individual and paired with social capital scores to determine if individuals with certain levels of social capital were more likely to participate in group or individual activities.

Objective Five

The fifth objective was to determine if a model existed that explained a significant portion of the variance in the extent of participation in professional development activities from the following selected variables:

- A. Level of social capital
- B. Gender
- C. Age
- D. Ethnicity
- E. Years of professional experience in current field
- F. Years of experience with the current employer
- G. Job level
- H. Highest level of education completed
- I. Number of memberships in professional associations
 - 1. Directly related to the job (i.e. in one's field)
 - 2. Indirectly related to one's job (e.g. toastmasters)

For ease in setting up the model, social capital was grouped into the

demographic variables. The remaining demographic variables were included in the model as control variables to determine their impact on participation. Four of the independent variables (gender, ethnicity, job level, and highest level of education completed) were categorical and were recorded as dichotomous variables through the use of binary coding.

Data analysis consisted of Pearson's Product Moment Correlations and a combination of block and forward selection procedures. Due to the fact that social capital is the primary variable of interest to the researcher, level of social capital was forced into the regression model first. The remaining demographic variables were entered in a forward selection procedure. Forward selection of the independent variables was the preferred method of analysis because of the exploratory nature of the study.

A total of three regression analyses were conducted with the demographic variables. The first model included the sum total of all voluntary activities (both individual and group activities) as the dependent variable, the second included the sum total of all voluntary individual activities as the dependent variable, and the third model consisted of the sum total of all voluntary group activities as the dependent variable. For each model, the probability of F to enter the equation was set at .05 and the probability of F to be removed from the model was set at .10. Variables were added to the regression equation if they increased the explained variance by one percent or more, as long as the overall equation was significant. The data was examined for normality, linearity, and homoscedasticity. In addition, collinearity diagnostics and multiple regression diagnostics were analyzed to detect the presence of influential outliers.

CHAPTER 4

RESULTS AND FINDINGS

The primary purpose of this study was to determine if a relationship exists between level of social capital and the extent of participation in professional development activities for professional employees of a profit-based organization located in the Southeastern United States. Data was collected through surveys of corporate staff within the organization's headquarters. The survey was designed to determine the extent of participation in professional development, the level of social capital, and demographic characteristics. Utilizing Dillman's (2000) Total Design Method for survey methodology, the data collection process included an initial survey and cover letter, a postcard reminder one week later, a replacement survey three weeks after the initial delivery of the survey, and a second replacement six weeks after the initial delivery. A total of 146 usable surveys were returned, which exceeded the minimum required usable sample. The findings and analyses of the study are presented in this chapter and are arranged by each research objective.

Objective One

The first objective was to describe the study participants on the following selected demographic characteristics:

- A. Gender
- B. Age
- C. Ethnicity
- D. Years of professional experience in current field
- E. Years of experience with the current employer
- F. Job level

G. Highest level of education completed

H. Number of memberships in professional associations

1. Directly related to the job (e.g. in one's field)

2. Indirectly related to the job (e.g. toast masters or toastmistress)

Gender

Gender was the first variable on which respondents were described for objective one. For the variable gender, the majority of respondents were male ($n = 84$, 57.5%). Females accounted for 42.5% ($n = 62$).

Age

The second variable used to describe the respondents in this study was age at their last birthday. The mean age of the study participants was 39.3 years ($SD = 11.5$) with a range from 22 to 67 years.

Ethnicity

Respondents were asked to check off the category of the racial/ethnic group to which they belong. These groups included "White (Non Hispanic)," "Black (Non Hispanic)," "Hispanic," "Asian or Pacific Islander," "Native American" and "Other (Specify)" as categories on the survey. The majority of respondents ($n = 133$, 91.6%) reported their ethnicity as "White (Non Hispanic)." The ethnic group that had the second largest number of respondents ($n = 6$, 4.2%) was "Black (Non Hispanic)." Two respondents (1.4%) reported their ethnicity as "Hispanic" and two (1.4%) reported their ethnicity as "Asian/Pacific Islander." Two respondents (1.4%) indicated that they were multiracial by checking off both the "White (Non Hispanic)" and "Native American" categories. The ethnic distribution for the survey is provided in Table 3.

Table 3

Ethnicity Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States

Ethnicity	<i>n</i> ^a	Percentage
White (Non Hispanic)	133	91.6
Black (Non Hispanic)	6	4.2
Hispanic	2	1.4
Asian or Pacific Islander	2	1.4
Multi-Racial ^b	2	1.4
Other	0	0
Total	145	100.0

^aOne respondent failed to respond to the ethnicity item on the survey.

^bRespondents indicated they were both “Native American” and “White (Non Hispanic).”

Years of Professional Experience in the Current Field

Respondents were asked to indicate their years of professional experience in their current fields. The mean for years of experience was 13.8 years ($SD = 10.26$) with a range of .5 years to 40 years in their current fields.

Years of Experience with the Current Employer

In addition to the years of professional experience in the current field, respondents were also asked to indicate the number of years of experience they had with the current employer. The mean years with the current employer was 4.8 years ($SD = 5.37$) with a range of two months to 29 years.

Job Level

The sixth demographic variable on which respondents were described was the current job level within the organization. Respondents were asked to check off whether

they were classified as “managerial/supervisory” or “non-managerial/non-supervisory.” There were more respondents in managerial/supervisory roles ($n = 85$; 58.2%) than in non-managerial/non-supervisory roles ($n = 61$; 41.8%).

Highest Level of Education Completed

Another variable on which respondents were described was the highest level of education completed. Respondents were asked to check the highest level they completed from the categories of “High School/GED,” “Associate Degree,” “Bachelor’s Degree,” “Master’s Degree (including MBA),” “Professional Degree (e.g., J.D., M.D.),” and “Doctoral Degree (e.g., Ph.D., Ed.D., Psy.D.).” The largest number of respondents ($n = 78$; 53.4%) indicated that their highest level of education completed was a bachelor’s degree. The second largest group ($n = 27$; 18.5%) included those who reported a master’s degree as the highest education level completed. Only one respondent (0.8%) had earned a doctoral degree. The distribution of highest level of education completed by the respondents is provided in Table 4.

Table 4

Highest Level of Education Completed Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States

Highest Level of Education Completed	n	Percentage
High School/GED	25	17.1
Associate Degree	10	6.8
Bachelor’s Degree	78	53.4
Master’s Degree	27	18.5

(Table continued)

Professional Degree	5	3.4
Doctoral Degree	1	0.8
Total	146	100.0

Number of Memberships in Professional Associations

Respondents were asked to indicate the professional associations to which they belonged. The survey item specifically asked respondents to “list all professional associations to which you belong that are directly related to your job (i.e. in your field),” and to “list all professional association to which you belong that are indirectly related to your job (e.g., toastmasters/toastmistress).” A complete listing of these associations is presented in Appendix F. The number of professional associations listed for each category provided the number of memberships in professional associations directly and indirectly related to the job.

The number of professional associations directly related to the job reported by study participants ranged from a low of zero to a high of seven with a mean of .87 ($SD = 1.21$). It should be noted that the majority of respondents ($n = 76$, 52.1%) did not list any professional associations directly related to the job. These data were coded as zero responses since the study participants provided useable data throughout the remainder of the instrument. The second most frequently reported number of professional associations directly related to the job listed by respondents was one ($n = 37$; 25.3%). The distribution for the number of professional associations directly related to the job is presented in Table 5.

Table 5

Number of Memberships in Professional Associations Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States

Memberships	<u>Directly Related to the Job^a</u>		<u>Indirectly Related to Job^b</u>	
	<i>n</i>	%	<i>n</i>	%
0	76	52.1	131	89.7
1	37	25.3	13	8.9
2	18	12.3	0	0
3	10	6.8	2	1.4
4	3	2.1	0	0
5	1	.7	0	0
7	1	.7	0	0
Total	146	100.0	146	100.0

^aMean = .87; *SD* = 1.21; range was from 0 to 7.

^bMean = .13; *SD* = .44; range was from 0 to 3.

The number of professional associations that were indirectly related to the job reported by study participants ranged from a low of zero to a high of three with a mean of .13 (*SD* = .44). The majority of respondents (*n* = 131, 89.7%) did not list any professional associations indirectly related to the job. These data were coded as zero responses since the study participants provided useable data throughout the remainder of the instrument. The second most frequently reported number of professional associations directly related to the job listed by respondents was one (*n* = 13, 8.9%). The distribution for the number of professional associations indirectly related to the job is also presented in Table 5.

Objective Two

The second objective was to describe the extent of participation in the following categories of professional development activities in the last 12 months:

A. Mandatory Professional Development

1. Internal training (provided by the employer)
 - a. Individual/Self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training)
2. External training (provided by a professional association) reimbursed by the employer
 - a. Individual/Self-paced learning activities (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training, conferences)
3. External training (provided by a professional association) *not* reimbursed by employer
 - a. Individual self-paced learning activities (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training, conferences)
4. College course(s) paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based)
5. College course(s) *not* paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence,

computer-based)

b. Group setting (e.g. traditional classroom-based training)

6. Self-Initiated learning activities

7. Other mandatory work related learning activities as specified by the respondent

B. Voluntary Professional Development

1. Internal training (provided by the employer)

a. Individual/Self-paced (e.g. independent study, correspondence, computer-based training)

b. Group setting (e.g. traditional classroom-based training)

2. External training (provided by a professional association) reimbursed by the employer

a. Individual/Self-paced learning activities (e.g. independent study, correspondence, computer-based training)

b. Group setting (e.g. traditional classroom-based training, conferences)

3. External training (provided by a professional association) *not* reimbursed by employer

a. Individual self-paced learning activities (e.g. independent study, correspondence, computer-based training)

b. Group setting (e.g. traditional classroom-based training, conferences)

4. College course(s) paid for by the employer

a. Individual/self-paced (e.g. independent study, correspondence, computer-based training)

b. Group setting (e.g. traditional classroom-based)

5. College course(s) *not* paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based)
6. Self-Initiated learning activities
7. Other mandatory work related learning activities as specified by the respondent

Respondents were asked to identify on the survey, within the last 12 months, the number of selected individual/self-paced and group activities in which they had participated on a mandatory and on a voluntary basis. Mandatory activities were defined as those that were “required by your employer” and voluntary activities were defined as those activities that were “initiated by you of your own free will.” To increase the respondents’ understanding of the activities and types listed, brief descriptions and examples were provided on the survey. For example, the activity of “Internal Training” was described on the survey as “Provided by the employer” and the type of internal training, “Individual/Self-Paced,” was described as “independent study, correspondence, computer-based training, etc.”

Some responses to the survey items required special consideration for coding purposes. First, although respondents were asked to provide the number of activities in which they had participated within the previous 12 months, four respondents indicated the number of hours (i.e. credit hours required by an organization for certification) they had earned or invested in the activities listed on the survey. To code these responses, the researcher divided the number of hours listed by eight (the average number of hours

in a work day) to determine the number of activities. If the hours listed were fewer than eight, then the researcher counted the number of activities as “1.”

A second coding issue was the failure to commit to an exact number of events. One individual provided a range of numbers (i.e. “6-8”) for an item on the survey. The researcher coded the midpoint between six and eight as “7.” Another respondent provided the responses of “20+” and “50+” to two items on the survey. The researcher coded these as “21” and “51” respectively. Five individuals simply stated “daily” for certain activities, in particular when responding to the number of times they had been involved in such self-initiated types of activities as “searching the internet for work related information” and “seeking work related information from a mentor/colleague.” For these cases, the researcher interpreted “daily” as the number of required work days per 12 months for each of those employees. This was adjusted for length of employment with the organization and leave policies to provide a more accurate estimate. Finally, two respondents responded to some of the items with the words “various” and “numerous.” The researcher interpreted that these responses were meant to imply that the respondents had participated in the activities at least two times in the previous 12 months, so she coded “various” and “numerous” as “2.”

The researcher observed that four participants had left the second and third pages of the survey (part of the participation in professional development section and the first part of the social capital section of the survey) blank. After examining the remainder of their responses and observing that the respondents had written extensively on all other pages in the survey, the researcher came to the conclusion that these respondents had accidentally skipped the pages in the survey containing these portions when opening the booklet. Therefore, for these cases, the items on these

pages were coded as “missing” in the statistical package and were excluded from the analysis.

Mandatory Professional Development

The first participation variable on which respondents were described was mandatory professional development. Respondents provided the extent of participation in such activities that were required by their employer within the past 12 months. The total mean for all of the mandatory activities was 34.40 ($SD = 105.45$). The highest mean for the mandatory activities provided on the survey was for the self-initiated learning activities ($M = 30.16$; $SD = 104.91$). Of the self-initiated learning activities, the highest mean was for the activity of searching the internet for work-related information ($M = 15.85$; $SD = 51.43$). The second highest mean for the self-initiated learning activities was for researching work-related information from a private collection of resources ($M = 6.94$; $SD = 35.86$). The mean for the activity of seeking work-related information from a mentor or colleague was 6.90 ($SD = 35.12$).

The second highest mean (3.08; $SD = 5.85$) of all mandatory activities was for internal training. Of the two types of mandatory internal training, the mean for individual activities was 1.04 ($SD = 2.40$). The mean for mandatory group internal training activities was 2.04 ($SD = 4.93$) activities.

For external training that was reimbursed by the employer, the overall mean number of activities was .82 ($SD = 2.12$). The mean for individual external activities that were reimbursed was .27 ($SD = 1.09$) and the mean for group activities was .55 ($SD = 1.57$).

“Other-Work Related Learning” activities were specified by the respondents. The mean for “other” mandatory activities was .15 ($SD = 1.69$). A total of two respondents

identified activities other than those included in the list provided on the survey. One person added “field trips,” and another added “new policies.” The means and standard deviations for the mandatory activities are provided in Table 6.

Table 6

Extent of Participation in Mandatory Professional Development Activities within the Previous 12 Months Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States

Activities	<i>n</i>	<i>M</i>	<i>SD</i>
Self-Initiated Learning ^a	142	30.16	104.91
Search Internet	142	15.85	51.43
Private Collection Research	142	6.94	35.86
Mentor/ Colleague	142	6.90	35.12
Library Research	142	0.31	2.40
Journals/ Magazines	142	0.16	0.62
Internal Training ^b	146	3.08	5.85
Individual	146	1.04	2.4
Group	146	2.04	4.93
External Training Reimbursed ^c	146	0.82	2.12
Individual	146	0.27	1.09
Group	146	0.55	1.57
Other Activities ^d	142	0.15	1.69
College Courses Paid for ^e	142	0.13	1.29
Individual	144	0.04	0.43
Group	142	0.09	0.88
External Training Not Reimbursed ^f	146	0.06	0.43
Individual	146	0.01	0.17

(Table continued)

Group	146	0.05	0.32
College Courses Not Paid for	142	0	0
Individual	142	0	0
Group	142	0	0
Total ^g	142	34.40	105.45

^aSelf-Initiated range = 0-711; journals/magazines range = 0-4; library research range = 0-27; private collection research range = 237; internet research range = 0-237; seeking information from mentor/colleague range = 0-237.

^bInternal Training range = 0-40; individual range = 0-16; group range = 0-40.

^cExternal Training reimbursed range = 0-13; individual range = 0-9; group range = 0-12.

^dReported to be "field trips" (number of activities = 20) and "new policies" (number of activities = 1); range = 0-20.

^eCollege Courses paid for range = 0-15; individual range = 0-5; group range = 0-10.

^fExternal Training range = 0-4; individual range = 0-2; group range = 0-3.

^gOverall total for Mandatory (both group and individual) activities; Range = 0-714.

Voluntary Professional Development

The second participation variable on which respondents were described was voluntary professional development. For this section of the survey, respondents provided the extent of participation in activities that were of their own free will and not required by their employer. The total mean for the voluntary activities was 108.57 ($SD = 286.63$). As with the mandatory activities, the highest mean (100.99; $SD = 285.74$) for all of the voluntary activities was for those that were categorized as self-initiated learning. Within the self-initiated learning category, the activity of searching the internet for work-related information had the highest mean of 44.77 ($SD = 102.61$). The mean for the activity of seeking work related information from a mentor or colleague was 29.73 ($SD = 96.02$).

The category with the second highest mean was external training that was reimbursed by the employer (3.09; $SD = 8.30$). Within the category of reimbursed

external training, the mean for individual training was 1.11 ($SD = 3.97$) and the mean for group training was 1.98 ($SD = 5.49$).

For voluntary internal training, the mean was 2.92 ($SD = 4.08$). The mean for individual activities was 1.15 ($SD = 2.24$) and the mean for group activities was 1.77 ($SD = 3.19$).

For the category of “Other Work-Related Learning” activities, seven respondents identified activities other than those already provided in the list on the survey. These included the following: “field trips,” “information sessions with vendors,” “Lunch and Learn” sessions, “Toastmasters,” “experience managing work projects,” “developing training methods for other staff,” and “[reading] business books.” The mean for “Other Work-Related Learning” activities was .48 ($SD = 2.21$). The means and standard deviations for the extent of participation in voluntary professional development activities are provided in Table 7.

Table 7

Extent of Participation in Voluntary Professional Development Activities within the Previous 12 Months Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States

Activities	<i>n</i>	<i>M</i>	<i>SD</i>
Search Internet	142	44.77	102.61
Mentor/ Colleague	142	29.73	96.02
Private Collection Research	142	17.77	92.90
Journals/ Magazines	142	7.45	11.21
Library Research	142	1.27	8.52
External Training Reimbursed ^b	146	3.09	8.30
Individual	146	1.11	3.97

(Table continued)

Group	146	1.98	5.49
Internal Training ^c	146	2.92	4.08
Individual	146	1.15	2.24
Group	146	1.77	3.19
Other Activities ^d	142	0.48	2.21
External Training Not Reimbursed ^e	146	0.44	1.28
Individual	146	0.20	0.73
Group	146	0.24	0.99
College Courses Paid for ^f	142	0.43	1.61
Individual	142	0.16	1.00
Group	142	0.27	1.25
College Courses Not Paid for ^g	142	0.22	0.91
Individual	142	0.06	0.30
Group	142	0.16	0.79
Total ^h	142	108.57	286.63

^aSelf-Initiated range = 0-3100; journals/magazines range = 0-100; library research range = 0-100; private collection research range = 0-1000; internet research range = 0-1000; seeking information from mentor/colleague range = 0-1000.

^bExternal Training reimbursed range = 0-80; Internal range = 0-40; group range = 0-40.

^cInternal Training range = 0-24; individual range = 0-16; group range = 0-20.

^dReported to be “field trips” (number of activities = 20), “information sessions with vendors” (number of activities = 10), “Lunch and Learn” (number of activities = 6), “Toastmasters” (number of activities = 10), “experience managing work projects” (number of activities = 5), “developing training methods for other staff” (number of activities = 1), and “[reading] business books” (number of activities = 2); Range = 0-20.

^eExternal Training range = 0-9; individual range = 0-5; group range = 0-9.

^fCollege courses paid for range = 0-10; individual range = 0-9; group range = 0-10.

^gCollege courses not paid for range = 0-8; individual range = 0-2; group range = 0-8.

^hOverall total for Voluntary (both group and individual) activities; Range = 0-3124.

The overall means and standard deviations for the professional development activities (both voluntary and mandatory) are presented in Table 8. As with the mandatory and voluntary activities, the overall mean ($M = 131.15$, $SD = 349.75$) for the

category of self-initiated activities was the highest. Within that category, searching the internet for work related information had the highest mean ($M = 60.63$, $SD = 132.79$).

Table 8

Overall Extent of Participation in Voluntary and Mandatory Professional Development Activities within the Previous 12 Months Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States

Activities	<i>n</i>	<i>M</i>	<i>SD</i>
Self-Initiated Learning ^a	142	131.15	349.75
Search Internet	142	60.63	132.79
Mentor/ Colleague	142	36.63	118.06
Private Collection Research	142	24.71	117.0
Journals/ Magazines	142	7.61	11.19
Library Research	142	1.57	8.84
Internal Training ^b	146	6.0	7.94
Individual	146	2.19	3.52
Group	146	3.81	6.89
External Training Reimbursed ^c	146	3.91	8.84
Individual	146	1.98	4.15
Group	146	2.53	6.11
Other Activities ^d	142	0.64	3.65
College Courses Paid for ^e	142	0.56	2.50
Individual	142	0.20	1.36
Group	142	0.36	1.55
External Training Not Reimbursed ^f	146	0.50	1.34
Individual	146	0.21	0.75

(Table continued)

Group	146	0.29	1.03
College Courses Not Paid for ^g	142	0.22	0.91
Individual	142	0.06	0.30
Group	142	0.16	0.79

^aSelf-Initiated range = 0-3400; journals/magazines range = 0-100; library research range = 0-100; private collection research range = 0-1100; internet research range = 0-1100; seeking information from mentor/colleague range= 0-1100.

^bInternal Training range = 0-60; individual range = 0-21; group range = 0-60.

^cExternal Training reimbursed range = 0-80; Internal range = 0-40; group range = 0-48.

^dReported to be “field trips” (number of activities = 40), “new policies” (number of activities = 1), “information sessions with vendors” (number of activities = 10), “Lunch and Learn” (number of activities = 6), “Toastmasters” (number of activities = 10), “experience managing work projects” (number of activities = 5), “developing training methods for other staff” (number of activities = 1), and “[reading] business books” (number of activities = 2); Range = 0-20.

^eCollege Courses paid for range = 0-24; individual range = 0-14; group range = 0-10.

^fExternal Training Not Reimbursed range = 0-9; individual range = 0-5; group range = 0-9.

^gCollege Courses not paid for range = 0-8; individual range = 0-2; group range = 0-8.

Objective Three

The third objective was to determine levels of social capital. Social capital was determined by asking respondents to respond to three contextual questions regarding the access to resources: 1) List (by initials) up to 10 people you have contacted throughout your career when you needed help advancing in your career; 2) List (by initials) up to 10 people who have contacted you throughout the course of your career for help with advancing in their careers; 3) List (by initials) up to 10 people you have contacted throughout your career to refer you to other individuals who could help you advance in your career. For ease in interpretation, the phrase “advancing in your/their career” was followed by the description, “may include such activities as getting a job, improving job performance, seeking a promotion or a pay raise, etc.” For

each contextual question, respondents were asked to complete a table allowing for the assessment of five indicators of social capital: network size, contact's employment, contact's work setting, contact's position within the organization, and the frequency of interaction with the contact. Network size was determined by the number of contacts listed. The contact's employment was designed to identify whether a contact worked within or outside of the organization. If a respondent indicated that the contact worked within the organization, a value of one was added, and if the respondent indicated that the contact did not work within the organization a value of two was added. If a respondent indicated that the contact did not work within the organization, then they were instructed to skip to the variable of frequency of interaction (1 = daily; 2 = weekly; 3 = monthly; 4 = quarterly; 5 = yearly or less). If a respondent indicated the frequency of contact was daily, the respondent received a value of one. Weekly contact resulted in a value of two, monthly contact resulted in a value of three, quarterly contact resulted in a value four, and yearly contact resulted in a value of five.

For work setting, if the contact worked within the organization, respondents were asked to indicate whether the respondent worked inside of the same department (to receive a value one) or outside of their department (to receive a value of two). Next, respondents were asked to indicate the contact's position level within the organization (0 = lower than yourself; 1 = same as yourself; 2 = higher than yourself). For respondents who indicated that the contact's position was lower in comparison to their own, no points were added. If a respondent indicated that the contact's position level was the same as his/her own, a value of one was added, and if a respondent indicated that the contact's position level was higher than his/her own, a value of two was added.

The following formula was developed to combine the total responses to all three contextual questions:

$$\text{Social capital} = \Sigma (\# \text{ of contacts} + \text{employment} + \text{work setting} + \text{position level} + \text{frequency of contact}) - \Sigma (\# \text{contacts working for same organization} + \text{contacts working in same unit} + \text{position level lower than self} + \text{position level same as self} + \text{weekly frequency of contact} + \text{daily frequency of contact}).$$

The highest possible score that could be obtained was 300.

Based on incomplete responses to one or all of the contextual questions, the social capital score could not be computed for 13 respondents. For example, these respondents failed to provide data for all of the social capital indicators for one or more of the contextual questions (i.e. left one or more columns in a table blank when not instructed to do so). These 13 respondents were excluded from all analyses involving the social capital score. Scores were computed, however, for those who failed to respond to a contextual question (i.e. left an entire table blank) and these respondents received “0s” for those questions. The researcher concluded that the failure to list individuals was not accidental due to the fact that those respondents completed the sections of the survey appearing before and after the social capital section.

Additionally, two respondents indicated with a brief note at the bottom of the blank tables that they intended to leave them blank because they had never been in such a situation and therefore had no individuals to list.

The mean social capital score was 63.48 ($SD = 43.65$) and the median was 58. The range of scores obtained was 0 to 226. Those obtaining a social capital score of 0 ($n = 7$; 5.3%) had no individuals to list for either of the contextual questions. The distribution of social capital scores is presented in Table 9.

Table 9

Social Capital Score Computed for Professional Employees of a Profit-Based Organization in the Southeastern United States

Score	<i>n</i>	Percentage
0	7	5.3
1-25	17	12.8
26-50	36	27.1
51-75	31	23.3
76-100	14	10.5
101-125	15	11.2
126-150	8	6.0
151 or more	5	3.8
Total	133	100.0

Note: Mean = 63.48; *SD* = 43.65; Range = 0-226

Objective Four

The fourth objective was to determine if a relationship existed between levels of social capital and extent of participation in professional development activities. A total of three analyses were conducted. The first analysis was to determine if a relationship existed between social capital and the reason for participation (i.e. mandatory or voluntary). Pearson's Product Moment Correlation was used to determine if a relationship existed between the sum total of all mandatory activities and social capital and to determine if a relationship existed between the sum total of all voluntary activities and social capital. The correlation coefficients were interpreted using Davis' (1971) descriptors for interpretation of correlation strength (.00-.09 = negligible association;

.10-.29 = low association; .30-.49 = moderate association; .50-.69 = substantial association; .70 or higher = very strong association). Coefficients identified for this analysis were non-significant and negligible. The correlation coefficients and significance levels for this analysis are presented in Table 10.

Table 10

Relationships between Social Capital Score and Overall Measures of Participation in Professional Development Activities

	<i>n</i>	<i>r^a</i>	<i>p^b</i>
Reason for Participation			
Mandatory	133	.073	.406
Voluntary	133	-.002	.986
Setting of Activity			
Group	133	-.090	.304
Individual ^c	133	.024	.786

^aPearson's Product Moment Correlation Coefficient.

^bTwo Tailed Alpha

^cSelf-initiated activities are included in individual activities.

A second analysis was conducted to determine if a relationship existed between social capital and the setting of the activities (i.e. group or individual). Pearson's Product Moment Correlation was used to determine if a relationship existed between social capital score and the sum total of group activities (both mandatory and voluntary) and to determine if a relationship existed between social capital and the sum total of individual activities (both mandatory and voluntary). Coefficients identified for this analysis were non-significant and negligible. These associations are also presented in Table 10.

A third Pearson's Product Moment Correlation analysis was used to determine if a relationship existed between the social capital score and the sub-categories of activities

under the headings of mandatory and voluntary professional development activities.

Responses to the following subcategories were considered sub-scores, and the sum of each was correlated with the social capital scores:

1. Internal training (provided by the employer)
 - a. Individual self-paced (e.g. independent study, correspondence, or computer based training)
 - b. Group setting (e.g. classroom-based)
2. External training (provided by a professional association) reimbursed by the employer
 - a. Individual self-paced learning activities (e.g. independent study, correspondence, or computer-based training)
 - b. Group setting (e.g. classroom based)
3. External training (provided by a professional association) *not* reimbursed by employer
 - a. Individual self-paced learning activities (e.g. independent study, correspondence, or computer-based training)
 - b. Group setting (e.g. classroom-based)
4. College course(s) paid for by the employer
 - a. Individual/self-paced (e.g. correspondence)
 - b. Group setting (e.g. classroom-based)
5. College course(s) *not* paid for by the employer
 - a. Individual/self-paced (e.g. correspondence)
 - b. Group setting (e.g. classroom-based)
6. Self-initiated learning activities

7. Other mandatory professional development activities as specified by the respondent

This analysis was conducted in steps: 1) The overall categories identified (e.g. total for all internal training activities) were correlated with social capital score; 2) The mandatory activities (e.g. mandatory internal training activities) were correlated with the social capital score and the voluntary activities (e.g. voluntary internal training activities) were correlated with social capital score; 3) The sub-categories identified (e.g. mandatory individual self-paced activities under the category of internal training activities) were correlated with social capital score. Relationships were analyzed for significance at the two tailed alpha level of .05. The correlation coefficients and significance levels are presented in Table 11.

For the categories of internal training, external training reimbursed by the employer, and external training not reimbursed by the employer, correlation coefficients for both mandatory and voluntary activities were non-significant. A low association ($r = .175, p = .045$) was found to exist between social capital score and the mandatory college courses that were paid for by the employer. In particular, the mandatory college courses that were taken individually or self-paced was related to social capital score ($r = .179, p = .040$). The association was such that the more the participation in mandatory self-paced college courses that were paid for by the employer the greater the social capital score. No association was found to exist for college courses that were not paid for by the employer.

While the overall self-initiated activities were not associated with social capital score, two of the self-initiated professional development activities were found to have

Table 11

The Relationships between Social Capital Score and Participation in Categories of Professional Development Activities

Activities	<i>n</i>	Mandatory		Voluntary		Total	
		<i>r^a</i>	<i>p^b</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Internal Training	133	-.078	.371	-.034	.701	-.075	.391
Individual	133	-.109	.215	.126	.151	.005	.956
Group	133	-.043	.623	-.124	.157	-.086	.330
External Training Reimbursed	133	-.095	.280	-.060	.491	-.079	.366
Individual	133	-.097	.271	-.043	.628	-.066	.452
Group	133	-.060	.496	-.061	.489	-.070	.426
External Training Not Reimbursed	133	.144	.100	-.047	.595	.001	.987
Individual	133	.107	.223	.041	.640	.064	.465
Group	133	.138	.116	-.091	.299	-.045	.612
College Courses Paid for	133	.175	.045	.110	.209	.161	.065
Group	133	.169	.052	.020	.821	.112	.201
College Courses Not Paid for	133	0	0	-.069	.434	-.069	.434

(Table continued)

Individual	133	0	0	-.074	.399	-.074	.399
Group	133	0	0	-.052	.557	-.052	.557
Self-Initiated Learning	133	.078	.375	.001	.995	.024	.786
Journals/ Magazines	133	.142	.105	.061	.490	.068	.438
Library Research	133	.178	.041	-.055	.533	-.005	.959
Private Collection Research	133	.051	.559	-.046	.601	-.021	.813
Search Internet	133	-.019	.826	-.048	.588	-.044	.614
Mentor/ Colleague	133	.194	.026	.095	.280	.135	.124
Other Activities	133	-.060	.498	-.068	.441	-.042	.633

^aPearson's Product Moment Correlation Coefficient.

^bTwo-Tailed Alpha.

low associations. In particular, the relationship between mandatory research for work-related information in a library and social capital was .178 ($p = .041$) and the relationship between being mandated to seek work-related information from a mentor or colleague was .194 ($p = .026$). The nature of the associations is such that the more the mandatory library research conducted, the greater the social capital score, and the more often individuals were mandated to seek work-related information from a mentor or colleague, the greater the social capital score.

Objective Five

Objective five was to determine if a model existed that explained a significant portion of the variance in the extent of participation in professional development activities from the following selected variables:

- A. Level of social capital
- B. Gender
- C. Age
- D. Ethnicity
- E. Years of professional experience in current field
- F. Years of experience with the current employer
- G. Job level
- H. Highest level of education completed
- I. Number of memberships in professional associations
 - 1. Directly related to the job (i.e. in one's field)
 - 2. Indirectly related to one's job (e.g. toastmasters)

The demographic variables were included in the model as control variables to determine their impact on participation. Three of the independent variables (ethnicity, job level,

and highest level of education completed) were categorical and were restructured as dichotomous variables through the use of binary coding. Job level was coded as “manager/supervisor” and “non-manager/non-supervisor.” “Manager/supervisor” was coded as “1” and “non-manager/non-supervisor” was coded as “0.” The variable “Ethnicity” was dichotomized as “White (non Hispanic)” and “not White” and is referred to for the purpose of analysis as “ethnic majority” due to the fact that the majority of respondents (91.7%) indicated belonging to the category labeled “White (non Hispanic).” “White (non Hispanic)” was coded as “1” and “not White” was coded as “0.” While gender is also a categorical variable, since it is naturally a dichotomy, it did not need to be restructured. Males were coded as “1” and females were coded as “0.” The variable “Highest Level of Education Completed” was dichotomized as “high school/GED” and “non high school/GED; “ “associates degree” and “non associates degree;” “bachelor’s degree” and “non bachelors degree;” “masters degree” and “non masters degree.” The categories of professional degree and Ph.D. were excluded from the analysis because only five respondents (3.4%) indicated that they had earned a professional degree, and only one respondent (1.4%) had earned a Ph.D.

Data analysis consisted of Pearson’s Product Moment Correlations and a combination of block and forward selection regression procedures. A total of three regression analyses were conducted. The first model included the sum total of the voluntary activities (in both individual and group settings) as the dependent variable, the second included the sum total of the voluntary individual activities as the dependent variable, and the third model consisted of the sum total of the voluntary group activities as the dependent variable. Due to the fact that social capital was the primary variable of interest to the researcher, social capital score was forced into the model first, and the

remaining variables were entered in a forward selection procedure. For each model, the probability of F to enter the equation was set at .05 and the probability of F to be removed from the model was set at .10. Variables were added to the regression equation if they increased the explained variance by one percent or more, as long as the overall equation was significant. The data was examined for normality, linearity, and homoscedasticity. In addition, collinearity diagnostics and multiple regression diagnostics to detect the presence of influential outliers were analyzed.

Sum Total of Voluntary Professional Development Activities Regression Equation

The first analysis consisted of a combination of a block and a forward selection regression procedure with participation in voluntary professional development activities (based on a sum total for participation in all group and individual voluntary activities) as the dependent variable. As the primary variable of interest, social capital was forced into the model as a block, and the other independent variables (gender, age, ethnicity, years of experience in the current field, years of experience with the current employer, job level, highest level of education completed, memberships in professional associations that are directly related to the job, and memberships in professional associations that are indirectly related to the job) were entered in a forward selection method. Forward entry of these independent variables was the preferred method of analysis because of the exploratory nature of the study. For descriptive purposes, the Pearson's Product Moment Correlation coefficients and significance levels for the sum total of voluntary activities and the independent variables are in Table 12. The correlation coefficients were analyzed using Davis' (1971) descriptors for interpretation of correlation strength (.00-.09 = negligible association; .10-.29 = low association; .30-

.49 = moderate association; .50-.69 = substantial association; .70 or higher = very strong association). A low association ($r = .173$, $p = .026$) was found to exist between social capital score and voluntary participation in professional development activities, suggesting that the higher the social capital score, the more the participation in voluntary professional development activities.

Table 12

The Relationship between Voluntary Professional Development Activities and Selected Demographic Variables

Variable	<i>n</i>	<i>r</i> ^a	<i>p</i>
Social Capital Score	128	.173	.026
Experience with Employer	128	-.146	.055
Gender ^b	128	.142	.055
High School ^c	128	-.138	.060
Professional Associations Directly Related to Job	128	.124	.081
Experience in Field	128	-.088	.162
Bachelor's Degree ^d	128	.074	.202
Age	128	-.071	.213
Master's Degree ^e	128	.070	.217
Associate Degree ^f	128	-.070	.216
Ethnic Majority ^g	128	.049	.292
Job Level ^h	128	.041	.324
Professional Associations Indirectly Related to Job	128	-.035	.348

^aPearson's Product Moment Correlation coefficient.

^bCoded males = 1; females = 0.

^cWhether highest level earned was a high school diploma (coded 1) or not (coded 0).

(Table continued)

^dWhether highest level earned was a bachelor's degree (coded 1) or not (coded 0).

^eWhether highest level earned was a Master's degree (coded 1) or not (coded 0).

^fWhether highest level earned was an associate degree (coded 1) or not (coded 0).

^gWhether respondents were "White (non Hispanic)" (coded 1) or "not White" (coded 0).

^hWhether respondents were "managers/supervisors" (coded 1) or "not managers/supervisors" (coded 0).

Histograms and scatterplots were examined for normality, linearity, and homoscedasticity. The data for the dependent variable, which is presented in Figure 2, were not normally distributed (skewness = 2.95; kurtosis = 9.25). The scatterplots for the dependent variable of total voluntary activities and standardized residuals were not randomly scattered about 0. The assumption of linearity held, as the plots revealed a somewhat linear relationship; however a visual inspection of the scatterplot revealed that homoscedasticity did not hold. According to Hair, Tatham, Anderson, and Black (1998), regression analyses are robust in regards to heteroscedasticity. Therefore, the researcher continued with the test.

In addition to assessing normality, linearity and homoscedasticity, analyses were conducted to determine if any of the variables were collinear. The preferred method for detecting collinearity was the computation of Variance Inflation Factors (VIF) and Tolerance levels. The cutoff criteria for assessing collinearity were VIF computations that exceeded 10.0 and Tolerance levels of less than .10 (Hair, Black, Babin, Anderson, and Tatham, 2005). Collinearity diagnostics did not reveal calculations for VIF or Tolerance levels that met the criteria for collinearity or the presence of overlap between variables. Therefore, the researcher concluded that collinearity did not exist within the data.

Participation in Voluntary Professional Development Activities

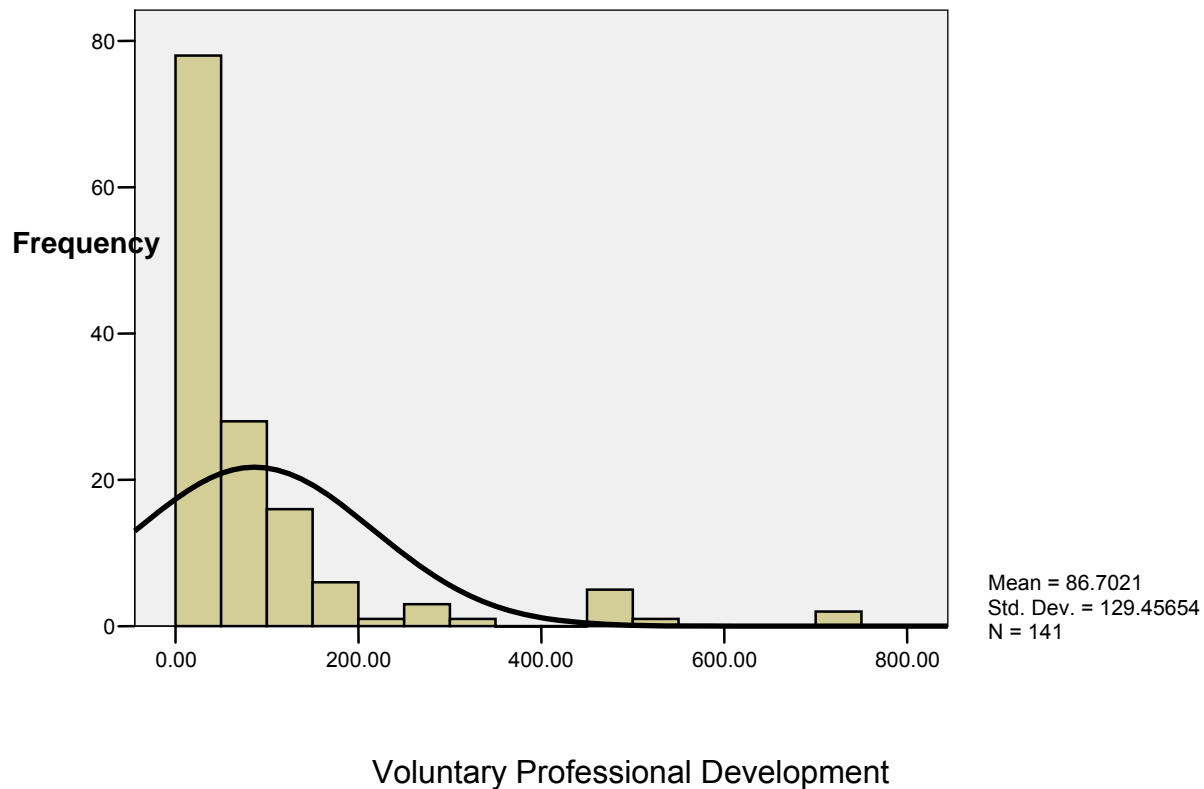


Figure 2. Standardized Residuals for the Dependent Variable Voluntary Professional Development Activities

An analysis of Cook's Distance and calculation of the Leverage statistic allowed for the detection of influential outliers in the voluntary participation data. The cutoff for the leverage statistics was .17 and was calculated using the following formula: $h > 2(k + 1)/n$, where k is the number of independent variables in the analysis and n is the sample size of 129. Cook's Distance values greater than the absolute value of 1 and Leverage calculations greater than .17 were analyzed to determine influence on the regression line. Based on these criteria, the presence of a potential outlier (case 24) was noted. Case 24 greatly exceeded both criteria for outlier detection (Cook's $D = 7.53$; Leverage = .48).

Computations were performed to determine the degree of influence case 24 had on the regression line. DFBETA (DFB) and Standardized DFBETA (SDFB) values were computed for the intercept, as well as for the variables social capital, memberships in professional associations indirectly related to the job, and gender for case 24. Using the formula $3/\sqrt{n}$ where n is the number in the sample (129), the standardized DFBETA values were compared to a threshold of .26. The DFBETA and Standardized DFBETA values for the regression line intercept and predictor variables are illustrated Table 13. Based on the criteria, case 24 was determined to be an influential outlier and was deleted from the analysis.

Table 13

DFBETA and Standardized DFBETA^a Values for Voluntary Participation in Professional Development Regression Intercept and Predictor Variables for Case 24

DFB ^b Intercept	SDFB ^c Intercept	DFB Social Capital	SDFB Social Capital	DFB Indirect Profess. Assoc. ^d	SDFB Indirect Profess. Assoc.	DFB Gender	SDFB Gender
-19.1638	-.8041	-.6665	-2.5092	467.9958	15.4922	55.1976	2.3611

^aCompared to a threshold of .26.

^bDFBETA.

^cStandardized DFBETA.

^dProfessional Associations.

With the deletion of case 24, social capital was the only variable remaining in the model (Beta = .173), explaining 3% of the variance in the dependent variable of total voluntary activities. The overall regression equation was not significant [$F(1, 126) = 3.88, p = .05$]. The multiple regression analysis for the sum total of voluntary professional development activities is presented in Table 14.

Table 14

Multiple Regression Analysis of Total Voluntary Professional Development Activities Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States and Selected Variables^a

ANOVA					
Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	
Regression	1	64180.163	3.877	.051	
Residual	126	16552.348			
Total	127				
Model Summary					
Model	<i>R</i> ² Cumulative	<i>R</i> ² Change	<i>F</i> Change	<i>p</i>	Beta ^b
Social Capital	.030	.030	3.877	.051	.173
Variables Not in the Equation					
Variable		<i>t</i>		<i>p</i>	
Experience with Employer		-1.704		.091	
Gender ^c		1.520		.131	
High School Diploma ^d		-1.477		.142	
Experience in Field		-1.173		.243	
Professional Associations Directly Related to the job		1.163		.247	
Age		-1.025		.308	
Bachelor Degree ^e		.960		.339	
Associate Degree ^f		-.938		.350	
Master's Degree ^g		.684		.495	
Professional Associations Indirectly Related to the Job		-.634		.527	

(Table continued)

Ethnic Majority ^h	.475	.636
Job Level ⁱ	-.079	.937

^aForward selection entry.

^bStandardized.

^cCoded males = 1; females = 0

^dWhether highest level earned was a high school diploma (coded 1) or not (coded 0).

^eWhether highest level earned was a bachelor's degree (coded 1) or not (coded 0).

^fWhether highest level earned was an associate degree (coded 1) or not (coded 0).

^gWhether highest level earned was a Master's degree (coded 1) or not (coded 0).

^hWhether respondents were "White (non Hispanic)" (coded 1) or "not White" (coded 0).

ⁱWhether respondents were "managers/supervisors" (coded 1) or "not managers/supervisors" (coded 0).

Sum Total of Voluntary Individual Professional Development Activities Regression Equation

For the second analysis, a combination of a block and a forward selection regression procedure with participation in voluntary individual professional development activities as the dependent variable (based on a sum total for participation in all types of individual activities that were voluntary) was used. As the principle variable of interest to the researcher, social capital was forced into the model as the first block, and the other independent variables (gender, age, ethnicity, years of experience in the current field, years of experience with the current employer, job level, highest level of education completed, memberships in professional associations that are directly related to the job, and memberships in professional associations that are indirectly related to the job) were entered in a forward selection method. The Pearson's Product Moment Correlation coefficients and significance levels between the sum total of voluntary individual activities and the independent variables are presented in Table 15. The correlation coefficients were analyzed using Davis' (1971) descriptors for interpretation of correlation strength (.00-.09 = negligible association; .10-.29 = low association; .30-.49

= moderate association; .50-.69 = substantial association; .70 or higher = very strong association). A low association ($r = .178$, $p = .022$) was found to exist between social capital score and participation in voluntary individual activities, suggesting that the greater the social capital score, the more the voluntary participation in professional development activities that were in individual settings.

Table 15

The Relationship between Voluntary Individual Professional Development Activities and Selected Demographic Variables

Variable	<i>n</i>	<i>r</i> ^a	<i>p</i>
Social Capital Score	128	.178	.022
Gender ^b	128	.150	.046
Experience with Employer	128	-.141	.056
High School ^c	128	-.135	.065
Professional Associations Directly Related to Job	128	.095	.143
Experience in Field	128	-.083	.177
Bachelor's Degree ^d	128	.075	.201
Master's Degree ^e	128	.075	.200
Age	128	-.068	.223
Associate Degree ^f	128	-.065	.232
Ethnic Majority ^g	128	.046	.304
Professional Associations Indirectly Related to Job	128	-.032	.359
Job Level ^h	128	.026	.385

^aPearson's Product Moment Correlation.

^bCoded males = 1; females = 0.

^cWhether highest level earned was a high school diploma (coded 1) or not (coded 0).

(Table continued)

^dWhether highest level earned was a bachelor's degree (coded 1) or not (coded 0).

^eWhether highest level earned was a Master's degree (coded 1) or not (coded 0).

^fWhether highest level earned was an associate degree (coded 1) or not (coded 0).

^gWhether respondents were "White (non Hispanic)" (coded 1) or "not White" (coded 0).

^hWhether respondents were "managers/supervisors" (coded 1) or "not managers/supervisors" (coded 0).

Histograms and scatterplots were examined for normality, linearity, and homoscedasticity. The data for the dependent variable, which is presented in the histogram in Figure 3, were not normally distributed (skewness = 2.96; kurtosis = 9.29). The scatterplots for the dependent variable of total voluntary activities and standardized residuals were not randomly scattered about 0. The assumption of linearity held, as the plots revealed a somewhat linear relationship; however a visual inspection of the scatterplot revealed that homoscedasticity did not hold. According to Hair et al. (1998), regression analyses are robust in regards to heteroscedasticity. Therefore, the researcher continued with the test.

In addition to assessing normality, linearity and homoscedasticity, analyses were conducted to determine if any of the variables were collinear. Collinearity diagnostics did not reveal calculations for VIF or Tolerance levels that met the criteria for collinearity or the presence of any overlap between variables. Therefore, the researcher concluded that collinearity did not exist within the data.

An analysis of Cook's Distance and calculation of the Leverage statistic allowed for the detection of influential outliers in the voluntary individual participation data. The Leverage statistic was calculated to be .17 using the following formula: $h > 2(k + 1)/n$, where k is the number of independent variables. Cook's Distance values greater than the absolute value of 1 and Leverage calculations greater than .17 were used to detect potential outliers. Based on these criteria, case 24 was noted as a potential outlier

because it greatly exceeded both criteria for outlier detection (Cook's D = 18.98; Leverage = .45).

Participation in Voluntary Individual Professional Development Activities

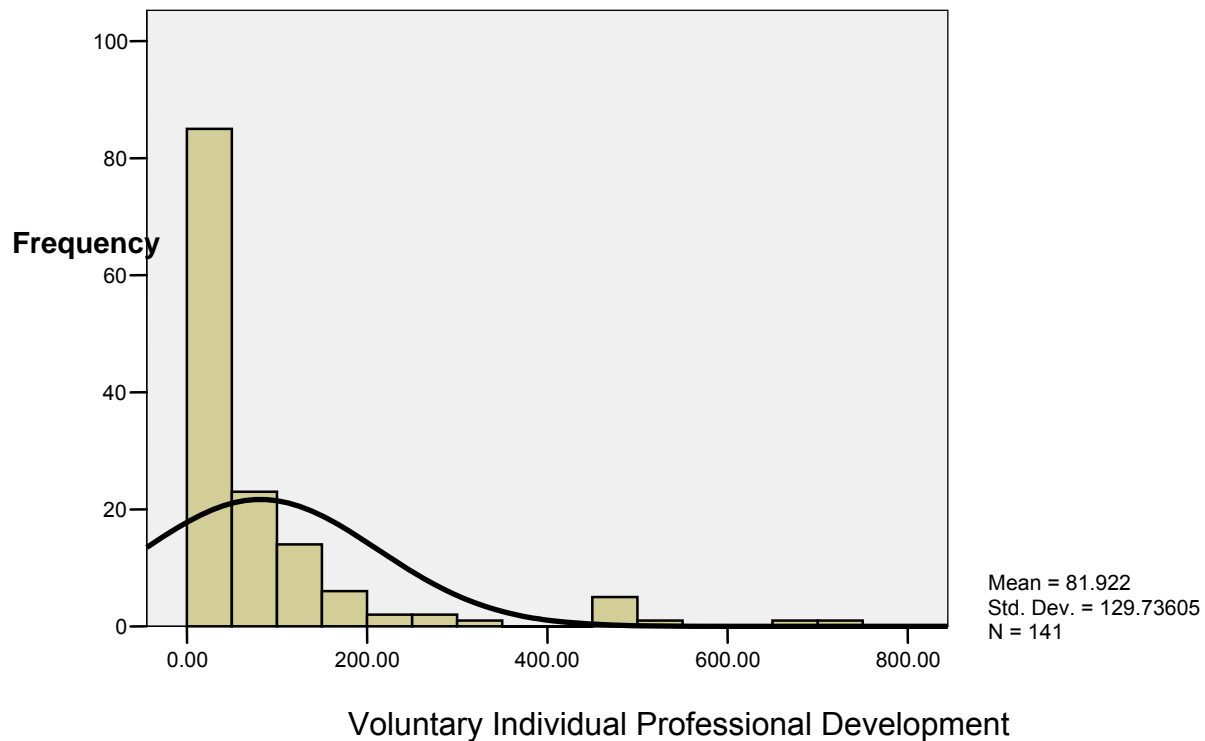


Figure 3. Standardized Residuals for the Dependent Variable Voluntary Individual Professional Development Activities

Computations were performed to determine the degree of influence case 24 had on the regression line. DFBETA (DFB) and Standardized DFBETA (SDFB) values were computed for the intercept, as well as for the variables social capital, memberships in professional associations indirectly related to the job, and gender for case 24. Using the formula $3/\sqrt{n}$ where n is the number in the sample (129), the standardized DFBETA values were compared to a threshold of .26. The DFBETA and Standardized DFBETA values for the regression line intercept and predictor variables are illustrated in Table

16. Based on the criteria, case 24 was determined to be an influential outlier and was deleted from the analysis.

Table 16

DFBETA and Standardized DFBETA^a Values for Voluntary Individual Participation in Professional Development Regression Intercept and Predictor Variables for Case 24

DFB ^b Intercept	SDFB ^c Intercept	DFB Social Capital	SDFB Social Capital	DFB Indirect Assoc. ^d	SDFB Indirect Assoc.	DFB Gender	SDFB Gender
-19.0399	-.79808	-.66220	-2.4904	464.97010	15.37556	54.84074	2.34331

^aCompared to a threshold of .26.

^bDFBETA.

^cStandardized DFBETA.

^dProfessional Associations.

With the deletion of case 24, social capital was the only variable remaining in the model, explaining 3.2% of the variance in the dependent variable of total voluntary individual activities. Social capital score tended to be associated with an increase in voluntary participation in individual professional development activities (Beta = .178). The overall regression equation was significant [$F(1, 126) = 4.13, p = .04$]. The multiple regression analysis of the sum total of voluntary professional development activities is presented in Table 17.

Table 17

Multiple Regression Analysis of Voluntary Individual Professional Development Activities Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States and Selected Variables^a

ANOVA				
Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Regression	1	68522.80	4.13	.04
Residual	126	16588.43		

(Table continued)

Total	127				
<div>Model Summary</div>					
Model	R^2 Cumulative	R^2 Change	F Change	p	Beta ^b
Social Capital	.032	.032	4.13	.04	.178
<div>Variables Not in the Equation</div>					
Variable				t	p
Experience with Employer				-1.647	.102
Gender ^c				1.610	.110
High School Diploma ^d				-1.433	.154
Experience in Field				-1.121	.264
Age				-.997	.321
Bachelor Degree ^e				.968	.335
Associate Degree ^f				-.890	.375
Professional Associations Directly Related to the job				.816	.416
Master's Degree ^g				.741	.460
Professional Associations Indirectly Related to the Job				-.612	.542
Ethnic Majority ^h				.437	.663
Job Level ⁱ				-.270	.788

^aForward selection entry.

^bStandardized.

^cCoded males = 1; females = 0.

^dWhether highest level earned was a high school diploma (coded 1) or not (coded 0).

^eWhether highest level earned was a bachelor's degree (coded 1) or not (coded 0).

^fWhether highest level earned was an associate degree (coded 1) or not (coded 0).

^gWhether highest level earned was a Master's degree (coded 1) or not (coded 0).

^hWhether respondents were "White (non Hispanic)" (coded 1) or "not White" (coded 0)

(Table continued)

ⁱWhether respondents were “managers/supervisors” (coded 1) or “not managers/supervisors” (coded 0).

Sum Total of Voluntary Group Professional Development Activities Regression Equation

For the third regression analysis, participation in professional development activities that were in voluntary group settings was the dependent variable. As the principle variable of interest, social capital was forced into the model as the first block, and other independent variables (gender, age, ethnicity, years of experience in the current field, years of experience with the current employer, job level, highest level of education completed, memberships in professional associations that are directly related to the job, and memberships in professional associations that are indirectly related to the job) were entered in a forward selection method. The Pearson’s Product Moment Correlation coefficients and significance levels between the sum total of voluntary group activities and the independent variables are presented in Table 18.

Table 18

The Relationship between Voluntary Group Professional Development Activities and Selected Demographic Variables

Variable	<i>n</i>	<i>r</i> ^a	<i>p</i>
Professional Associations Directly Related to Job	128	.347	<.001
Job Level ^b	128	.231	.004
Gender ^c	128	-.192	.015
Social Capital Score	128	-.138	.060
Experience in Field	128	-.102	.125
Professional Associations Indirectly Related to Job	128	-.083	.175

(Table continued)

Age	128	-.078	.190
Master's Degree ^d	128	-.069	.221
Associate Degree ^e	128	-.063	.240
Experience with Employer	128	-.054	.274
High School ^f	128	-.033	.355
Bachelor's Degree ^g	128	.032	.359
Ethnic Majority ^h	128	.029	.372

^aPearson's Product Moment Correlation.

^bWhether respondents were "managers/supervisors" or "not managers/supervisors."

^cCoded males = 1; females = 0.

^dWhether highest level earned was a Master's degree (coded 1) or not (coded 0).

^eWhether highest level earned was an associate degree (coded 1) or not (coded 0).

^fWhether highest level earned was a high school diploma (coded 1) or not (coded 0).

^gWhether highest level earned was a bachelor's degree (coded 1) or not (coded 0).

^hWhether respondents were "White (non Hispanic)" or "not White."

The correlation coefficients were analyzed using Davis' (1971) descriptors for interpretation of correlation strength (.00-.09 = negligible association; .10-.29 = low association; .30-.49 = moderate association; .50-.69 = substantial association; .70 or higher = very strong association). A moderate association ($r = .347$, $p < .001$) was found to exist between professional associations directly related to the job and voluntary group activities. Therefore, the more memberships respondents held in professional associations directly related to the job, the greater the voluntary participation in professional development activities in group settings. Histograms and scatterplots were examined for normality, linearity, and homoscedasticity. The data for the dependent variable, which is presented in Figure 4, were not normally distributed (skewness =

3.18; kurtosis = 12.95). The scatterplots for the dependent variable of total voluntary activities and standardized residuals were not randomly scattered about 0. The assumption of linearity held, as the plots revealed a somewhat linear relationship; however a visual inspection of the scatterplot revealed that homoscedasticity did not. According to Hair et al. (1998), regression analyses are robust in regards to heteroscedasticity. Therefore, the researcher continued with the test.

Participation in Voluntary Group Professional Development Activities

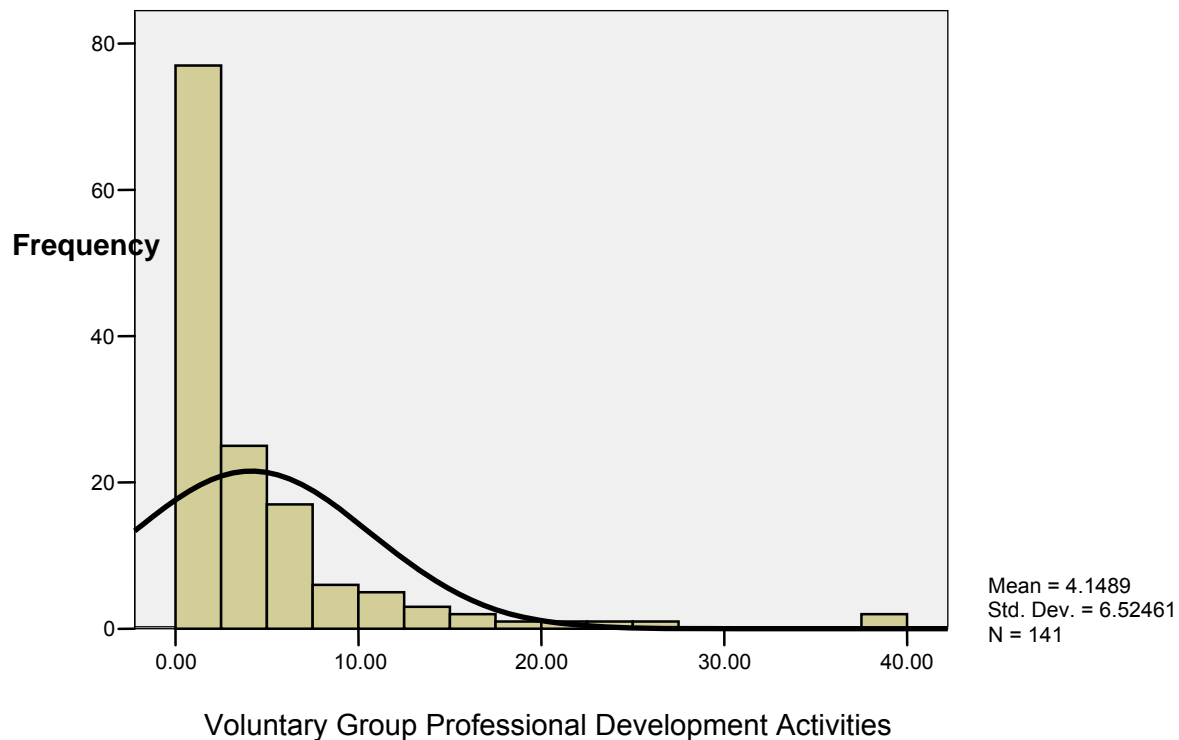


Figure 4. Standardized Residuals for the Dependent Variable Voluntary Group Professional Development Activities

Additional analyses were conducted to determine if any of the variables were collinear. Collinearity diagnostics did not reveal calculations for VIF or Tolerance levels

that met the criteria for collinearity or the presence of overlap between variables. Therefore, the researcher concluded that collinearity did not exist within the data. An analysis of Cook's Distance and calculation of the Leverage statistic allowed for the detection of influential outliers in the data. Cook's Distance values greater than the absolute value of 1 and Leverage calculations greater than .17 were analyzed to determine influence on the regression line. Based on these criteria, case 103 was noted as a potential outlier. Case 103 exceeded the Leverage criteria for outlier detection, but did not exceed the cutoff for Cook's D (Leverage = .22; Cook's D = .69).

Case 103 was deleted to determine the degree of influence on the regression line. DFBETA (DFB) and Standardized DFBETA (SDFB) values were computed for the intercept, as well as for the variables social capital, memberships in professional associations directly related to the job, job level, experience in the current field, and gender for case 103. Using the formula $3/\sqrt{n}$ where n is the number in the sample (129), the Standardized DFBETA values were compared to a threshold of .26. The DFBETA and Standardized DFBETA values for the regression line intercept and predictor variables are presented in Table 19. Based on the criteria, case 103 was determined to be an influential outlier and was deleted from the analysis.

The results of the multiple regression analysis indicated that five of the 13 variables entered the regression model: Social capital score (though R^2 was not significant), memberships in professional associations directly related to the job, job level, gender, and years of experience in the current field. Together, the variables explained 28% of the variance in voluntary participation in group professional development activities. The multiple regression analysis of the sum total of voluntary group professional development activities is presented in Table 20.

Table 19

DFBETA and Standardized DFBETA^a Values for Voluntary Group Participation in Professional Development Regression Intercept and Predictor Variables for Case 103

DFB ^b Intercept	SDFB ^c Intercept	DFB Social Capital	SDFB Social Capital	DFB Direct Profes. Assoc. ^d	SDFB Direct Profes. Assoc.	DFB Job Level	SDFB Job Level	DFB Exp. Field	SDFB Exp. Field	DFB Gender	SDFB Gender
-.3088	-.2607	-.0012	-.1041	.8876	2.0401	-.1768	-.1587	-.0226	-.4377	.4150	.4004

^aCompared to a threshold of .26.

^bDFBETA.

^cStandardized DFBETA.

^dProfessional Associations.

Table 20

Multiple Regression Analysis of Total Voluntary Group Professional Development Activities Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States and Selected Variables^a

<u>ANOVA</u>					
Source of Variation	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	
Regression	5	313.471	9.39	<.001	
Residual	122	33.379			
Total	127				
<u>Model Summary</u>					
Variable	<i>R</i> ² Cumulative	<i>R</i> ² Change	<i>F</i> Change	<i>p</i>	Beta ^b
Social Capital Score	.019	.019	2.46	.119	-.243
Professional Associations Directly Related to the Job	.156	.137	20.30	<.001	.327
Job Level ^c	.196	.040	6.19	.014	.309
Gender ^d	.248	.052	8.53	.004	-.215
Experience in the Current Field	.278	.030	4.99	.027	-.180
<u>Variables Not in the Equation</u>					
Variable		<i>t</i>		<i>p</i>	
Professional Associations Indirectly Related to the Job		-1.163		.247	
Master's Degree ^e		-1.047		.297	
Experience with Employer		-.528		.599	
High School ^f		.403		.688	
Associate Degree ^g		.397		.692	

(Table continued)

Ethnic Majority ^h	-.170	.865
Age	.135	.893
Bachelor's Degree ⁱ	.098	.922

^aForward selection entry.

^bStandardized.

^cWhether respondents were "managers/supervisors" (coded 1) or "not managers/supervisors" (coded 0).

^dCoded males = 1; females = 0.

^eWhether highest level earned was a Master's degree (coded 1) or not (coded 0).

^fWhether highest level earned was a high school diploma (coded 1) or not (coded 0).

^gWhether highest level earned was an associate degree (coded 1) or not (coded 0).

^hWhether respondents were "White (non Hispanic)" (coded 1) or "not White" (coded 0).

ⁱWhether highest level earned was a bachelor's degree (coded 1) or not (coded 0).

Of the variables that entered into the model, the following were associated with a decrease in voluntary participation in group professional development activities: Social capital score, gender and experience in the current field. The number of memberships in professional associations directly related to the job and job level were associated with an increase in voluntary participation in professional development activities.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Purpose and Objectives

The primary purpose of this study was to determine if a relationship exists between level of social capital and the extent of participation in professional development activities for professional employees of a profit-based organization located in the Southeastern United States. Specific objectives of this study were to:

1. Describe the research participants on selected personal and professional characteristics:
 - A. Gender
 - B. Age
 - C. Ethnicity
 - D. Years of professional experience in current field
 - E. Years of experience with the current employer
 - F. Job level
 - G. Highest level of education completed
 - H. Number of memberships in professional associations
 1. Directly related to the job (e.g. in one's field)
 2. Indirectly related to the job (e.g. toast masters or toast mistress)
2. Describe the extent of participation in the following categories of professional development activities within the last 12 months:
 - A. Mandatory Professional Development
 1. Internal training (provided by the employer)

- a. Individual/Self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training)
- 2. External training (provided by a professional association) reimbursed by the employer
 - a. Individual/Self-paced learning activities (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training, conferences)
- 3. External training (provided by a professional association) *not* reimbursed by employer
 - a. Individual self-paced learning activities (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training, conferences)
- 4. College course(s) paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based)
- 5. College course(s) *not* paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence, computer-based)
 - b. Group setting (e.g. traditional classroom-based training)
- 6. Self-Initiated learning activities

7. Other mandatory work related learning activities as specified by the respondent

B. Voluntary Professional Development

1. Internal training (provided by the employer)
 - a. Individual/Self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training)
2. External training (provided by a professional association) reimbursed by the employer
 - a. Individual/Self-paced learning activities (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training, conferences)
3. External training (provided by a professional association) *not* reimbursed by employer
 - a. Individual self-paced learning activities (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based training, conferences)
4. College course(s) paid for by the employer
 - a. Individual/self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based)
5. College course(s) *not* paid for by the employer

- a. Individual/self-paced (e.g. independent study, correspondence, computer-based training)
 - b. Group setting (e.g. traditional classroom-based)
- 6. Self-Initiated learning activities
- 7. Other mandatory work related learning activities as specified by the respondent
- 3. Determine levels of social capital.
- 4. Determine if a relationship exists between levels of social capital and extent of participation in professional development activities.
- 5. Determine if a model exists that explains a significant portion of the variance in the extent of participation in professional development activities from the following selected variables:
 - A. Level of social capital
 - B. Gender
 - C. Age
 - D. Ethnicity
 - E. Years of professional experience in current field
 - F. Years of experience with the current employer
 - G. Job level
 - H. Highest level of education completed
 - I. Number of memberships in professional associations
 - 1. Directly related to the job (i.e. in one's field)
 - 2. Indirectly related to one's job (e.g. toastmasters)

Population and Sample

The target population for this study was professional employees of a profit-based organization located in the Southeastern United States. Professional employees were defined by the company as overtime exempt employees, or corporate staff as opposed to wage staff. The company provides engineering, construction, fabrication, environmental, and industrial services to private, non-profit and public sector entities around the world.

In order to meet the objectives of the study, individuals were randomly selected from a list of corporate staff within the company's headquarters to receive a survey. The random selection process took place in two phases. In the first phase, 500 people were randomly selected from the 655 employees (658 minus the three individuals who facilitated the study). Of the 500 selected, 66 were determined to be frame errors because they were no longer working in the geographic location of interest. In the second phase, 75 additional people were randomly selected from the list of employees, and 31 were determined to be frame errors. In all, 97 people selected for the study were frame errors. After adjusting for the frame errors, the accessible population was determined to be 558 and 478 people received the survey. The minimum required usable sample was 99 and 146 usable surveys were returned to the researcher.

Procedures

Data was collected via a survey containing three sections: demographic information, amount of participation in professional development activities, and a measure for social capital (Appendix A). Demographic categories selected for inclusion in the survey were drawn from literature on participation in adult education activities

(National Center for Education Statistics, 2005a). Some of the participation in professional development variables were drawn from the literature on participation in workplace learning activities (Lohman, 2005) and the remaining variables were derived from the researcher's knowledge of professional development activities. Finally, the social capital measure were drawn from existing literature on social network analysis and its application in identifying social capital (Hatala, 2003; Hatala, 2006; Seibert et al., 2001). A total of ten individuals who were experts in social capital and survey design, and individuals in similar positions to those surveyed were consulted in the development of the instrument. These individuals also examined the instrument to determine content validity and to ensure clarity in instructions.

The survey was administered according to Dillman's Total Design Method (1972; 1991; 2000). A contact person within the organization was asked to send a brief pre-notification memo to the drawn sample, informing them of the forthcoming surveys (Appendix B). The researcher delivered the surveys to the organization, which were addressed to each individual in the drawn sample. The surveys were then distributed to the participants via the company's inner-office mail system. A cover letter (Appendix C) attached to the survey contained a brief introduction about the importance of the study, an explanation of why participation in the research was needed, instructions, a time estimate for completion of the instrument, a statement about confidentiality and coding procedures, a statement about the Louisiana State University Institutional Review Board, the protocol for returning the instrument (for those who wished to complete it or those who wished to be withdrawn from the study), and a closing statement with the researcher's contact information. A self-addressed, postage paid envelope was

provided to enable respondents to return the surveys directly to the researcher. Each survey was coded to distinguish respondents from non-respondents.

In accordance with Dillman's (1972; 1991) follow-up methods, approximately one week after the initial delivery of the surveys to the organization, a postcard (see Appendix D) was sent to non-respondents as a follow-up to thank those who had completed the survey and to remind those who had not yet done so to complete and return the survey. Three weeks after the original delivery of the surveys, a second copy of the survey along with a follow-up cover letter (see Appendix E) reminding participants who had not returned the survey to do so. Finally, six weeks after the initial delivery of the surveys, a second replacement survey with the same follow-up cover letter was sent to non-respondents.

Summary of Findings

Objective One

The majority of respondents were male ($n = 84$, 57.5%). Females accounted for 42.5% ($n = 62$). The mean age of the study participants was 39.3 years ($SD = 11.5$) with a range from 22 to 67 years. The majority of respondents ($n = 133$, 91.6%) were in the "White (Non Hispanic)" ethnic group. The second largest number of respondents ($n = 6$, 4.2%) were in the "Black (Non Hispanic)" ethnic group. Two respondents (1.4%) belonged to the "Hispanic" and two (1.4%) belonged to the "Asian/Pacific Islander" group. Two respondents (1.4%) indicated that they were multiracial by checking off both "White" and "Native American" categories.

The mean for years of experience in the current field was 13.8 years ($SD = 10.26$) with a range of .5 years to 40 years in their current field. The mean years with

the current employer was 4.8 years ($SD = 5.37$) with a range of two months to 29 years. More respondents reported being in managerial/supervisory roles ($n = 85$; 58.2%) than in non-managerial/non-supervisory roles ($n = 61$; 41.8%).

The largest number of respondents ($n = 78$; 53.4%) indicated that the highest level of education completed was a bachelor's degree. The second largest group ($n = 27$; 18.5%) included those with a master's degree as the highest education level obtained. The majority of respondents ($n = 76$, 52.1%) did not list any professional associations directly related to the job. Therefore, the number of professional associations directly related to the job reported by study participants ranged from a low of zero to a high of seven with a mean of .87 ($SD = 1.21$). The second most frequently reported number of professional associations directly related to the job listed by respondents was one ($n = 37$; 25.3%).

The number of professional associations that were indirectly related to the job reported by study participants ranged from a low of zero to a high of three with a mean of .13 ($SD = .44$). The majority of respondents ($n = 131$, 89.7%) did not list any professional associations directly related to the job. The second most frequently reported number of professional associations directly related to the job listed by respondents was one ($n = 13$, 8.9%).

Objective Two

Mandatory Professional Development Activities. The total mean for all of the mandatory activities was 34.40 ($SD = 105.45$). The highest mean for the mandatory activities provided on the survey was for the self-initiated learning activities ($M = 30.16$; $SD = 104.91$). Of the self-initiated learning activities, the highest mean was for the

activity of searching the internet for work-related information ($M = 15.85$; $SD = 51.43$). The second highest mean for the Self-Initiated Learning Activities was for researching work-related information from a private collection of resources ($M = 6.94$; $SD = 35.86$). The mean for the activity of seeking work-related information from a mentor or colleague was 6.90 ($SD = 35.12$).

The second highest mean (3.08; $SD = 5.85$) of all mandatory activities was for internal training. Of the two types of mandatory internal training, the mean for individual activities was 1.04 ($SD = 2.40$). The mean for mandatory group internal training activities was 2.04 ($SD = 4.93$) activities.

For mandatory external training that was reimbursed by the employer, the overall (group and individual) mean number of activities was .82 ($SD = 2.12$). The mean for individual external activities that were reimbursed was .27 ($SD = 1.09$) and the mean for group activities was .55 ($SD = 1.57$).

Voluntary Professional Development Activities. The total mean for the voluntary activities was 108.57 ($SD = 286.63$). As with the mandatory activities, the highest mean (100.99; $SD = 285.74$) for all of the voluntary activities was for those that were categorized as self-initiated learning. Within the self-initiated learning category, the activity of searching the internet for work-related information had the highest mean of 44.77 ($SD = 102.61$). The mean for the activity of seeking work related information from a mentor or colleague was 29.73 ($SD = 96.02$).

The second highest mean was for the category of voluntary external training that was reimbursed by the employer (3.09; $SD = 8.30$). Within the category of reimbursed external training, the mean for individual training was 1.11 ($SD = 3.97$) and the mean for group training was 1.98 ($SD = 5.49$). For voluntary internal training, the mean was 2.92

($SD = 4.08$). The mean for individual activities was 1.15 ($SD = 2.24$) and the mean for group activities was 1.77 ($SD = 3.19$).

Objective Three

The mean social capital score was 63.48 ($SD = 43.65$) and the median was 58. The range of scores obtained was 0 to 226. The highest possible score that could be obtained was 300. Those obtaining a social capital score of 0 ($n = 7$; 5.3%) had no individuals to list for either of the contextual questions. The researcher assumed that the failure to list individuals was not accidental due to the fact that those respondents completed the sections of the survey appearing before and after the social capital section.

Objective Four

According to Davis' (1971) descriptors, Pearson's Product Moment Correlation coefficients were negligible in determining if a relationship existed between the broad categories of mandatory and voluntary participation and social capital scores. Negligible coefficients were also identified in determining if a relationship existed between social capital score and the total group activities and between social capital and the total individual activities.

The more the participation in mandatory self-paced college courses that are paid for by the employer, the greater the social capital score. A low association ($r = .175$, $p = .045$) was found to exist between social capital score and the mandatory college courses that were paid for by the employer. The mandatory college courses that were taken individually, or self-paced was related to social capital score ($r = .179$, $p = .040$).

While the overall self-initiated activities were not associated with social capital score, two of the self-initiated professional development activities were found to have low associations. The relationship between mandatory research for work-related information in a library and social capital was .178 ($p = .041$) and the relationship between being mandated to seek work-related information from a mentor or colleague was .194 ($p = .026$). Therefore, the more the mandatory library research conducted, the greater the social capital score, and the more often individuals are mandated to seek work-related information from a mentor or colleague, the greater the social capital score.

Objective Five

Findings for objective five are based on three separate multiple regression analyses. The first model included the sum total of voluntary activities (based on both individual and group activities) as the dependent variable, the second included the sum total of voluntary activities in individual settings as the dependent variable, and for the third model consisted of the sum total of voluntary activities in group settings as the dependent variable. Due to the fact that social capital was the primary variable of interest to the researcher, social capital score was forced into the model first, and the remaining variables (gender, age, ethnicity, years of experience in the current field, years of experience with the current employer, job level, highest level of education completed, memberships in professional associations that are directly related to the job, and memberships in professional associations that are indirectly related to the job) were entered in as a forward selection procedure. Two models existed which explained a significant portion of the variance in voluntary participation in individual professional

development settings, and voluntary participation in group professional development settings.

Sum Total of Voluntary Professional Development Activities. For the first regression analysis, voluntary participation in professional development activities was the dependent variable. The dependent variable was based on a sum total for participation in all types of activities that were voluntary. The selected demographic variables could not explain a significant portion of the variance in voluntary participation in professional development activities [$F(1, 126) = 3.88, p = .05$]. Social capital, the primary variable of interest to the researcher, explained 3% of the variance, but was not a significant contributor.

Sum Total of Voluntary Individual Professional Development Activities. For the second regression analysis, the dependent variable was voluntary participation in professional development activities that were in individual settings. Social capital explained a significant portion of the variance (3.2%) in the dependent variable of voluntary individual activities [$F(1, 126) = 4.13, p = .04$]. Social capital score tended to be associated with an increase in voluntary participation in individual professional development activities (Beta = .178).

Sum Total of Voluntary Group Professional Development Activities. For the third regression analysis, the dependent variable was voluntary participation in professional development activities that were in group settings. Memberships in professional associations directly related to the job, job level, gender, and years of experience in the current field all explained a significant portion of the variance [$F(5, 122) = 9.39, p < .001$]. Gender and experience in the current field were associated with an increase in participation in voluntary, group professional development activities. The

number of memberships in professional associations directly related to the job and job level were associated with an increase in participation.

Conclusions, Implications, and Recommendations

Conclusion One

Study participants engaged in more self-initiated learning activities than any other area of professional development selected for inclusion in this study. This conclusion is based on the finding that the average number of times study participants reported that they engaged in a self-initiated activity was 131.15 in the previous 12 months. In particular, study participants reported searching the internet for work-related information an average of 60.62 times, seeking work-related information from a mentor or colleague an average of 36.63 times, and researching information from a private collection of resources an average of 24.71 times. These findings are consistent with estimates that self-initiated activities account for a large percentage of job related learning (Brinkerhoff & Gill, 1994).

The amount of participation in self-initiated activities could be due to easier access to information via the internet or interaction with colleagues (Lohman, 2005). According to Lohman (2005), access to adequate computer technology allows professionals to communicate more easily with others and to obtain needed information. An implication of this conclusion is that the employees' use of convenient resources (such as technological tools and knowledgeable colleagues) to improve job performance will help them to stay abreast of current issues and technological trends which will in turn help the organization to remain competitive in its industry sector. Therefore, the access to these resources is of the utmost importance. Based on this conclusion, it is recommended that the organization maximize the accessibility of these

resources by incorporating into its existing policies such activities as formal mentoring between staff and enhanced access to computers and other technological tools needed to improve job performance.

Conclusion Two

Participation in mandatory formal professional development activities was high. This conclusion is based on the finding that the average respondent participated in 4.09 mandatory formal activities within the previous 12 months (based on the sum total of internal training, external training, and college courses). This finding suggests that the policies and practices within this organization place a high value on training and development. Thus, by requiring participation in formal training and development, the organization emphasizes to its employees the importance of keeping knowledge, skills and abilities current. The researcher recommends that the organization determine if in fact its policies and practices regarding participation in formal training and development are optimizing organizational effectiveness by evaluating whether the knowledge, skills, and abilities acquired through training are actually transferred to the job. Furthermore, the organization should determine if there is an adequate return on the investment in the time and money spent on formal training and development.

Conclusion Three

Participation in voluntary formal professional development activities was high. This conclusion is based on the finding that the average respondent participated in 7.1 voluntary formal learning activities within the previous 12 months (based on the sum total of internal training, external training, and college courses). These findings suggest that employees value the importance of participation in formal training and development opportunities, regardless of whether it is required by the employer.

According to Tharenou (2001) the expectation of gaining valued outcomes plays a role in an individual's decision to participate in professional development. Because people expect valuable outcomes as a result of participation in professional development activities, and if in fact the organization values their participation, the organization should acknowledge employees' attempts to voluntarily improve their job performance and provide incentives to continue to encourage voluntary participation. Opportunities for promotion, pay raises, acknowledgement for high levels of participation, and the use of other incentives that employees deem valuable will reinforce voluntary participation in professional development activities. The researcher also recommends that the organization encourage and support employees to locate and inform others of professional development activities that they deem to be job-relevant. If these activities are to be undertaken during work time, it is also important that the organization put appropriate measures in place to determine if there is an optimum benefit from participating in these activities, such as return on investment in the time and money spent on these activities.

Conclusion Four

Social capital was a significant predictor of participation in voluntary activities that were in individual settings (including those activities that were self-initiated). This conclusion is based on the finding that social capital was the only significant predictor of participation in voluntary professional development activities that were in individual settings.

This finding is meaningful because it supports the researcher's hypothesis that there is a connection between participation in professional development activities and the amount of social capital one possesses. This conclusion addresses the recent

emphasis on the need to study social networks in order to understand participation in learning activities (Hatala, 2006). In addressing this need, the conclusion helps to bridge a gap in human resource development literature by increasing the understanding of the role of social capital in participation in professional development activities.

Based on this conclusion, the researcher recommends the following: 1) Future research should be conducted to confirm the findings of this study; 2) Given that individual activities include one-on-one collaborations with mentors/colleagues, human resource development professionals should include mentoring and relationship building in employee development plans to encourage the use of one-on-one contacts to support the acquisition of work-related information. One way to increase one-on-one collaborations is to establish a formal mentoring program to allow more experienced employees to share knowledge and expertise with less experienced employees. Another way to increase supportive collaborations is to organize departments to facilitate interaction between employees. Researchers advocate that organizations who wish to encourage supportive collaborations between employees should design workspaces to allow employees with less experience to interact with colleagues in their same professional areas (Dobbs, 2000). Therefore, both the physical proximity and the flow of communication between departments should be examined to maximize these collaborations.

Conclusion Five

There was a relationship between membership in professional associations that were directly related to the job and participation in professional development activities that were in group settings. This conclusion is based on the finding that the number of memberships held in professional associations that were directly related to the job

contributed significantly to the regression model [$F(5, 122) = 20.20, p < .001$; Beta = .327]. This finding suggests that individuals who belonged to professional associations that were directly related to their jobs were more likely to voluntarily engage in professional development activities that were in group settings.

The association may be due to the workshops, conferences, seminars, and other group-based professional development activities that professional associations sponsor. It was also found that the majority of respondents (52.1%) reported that they did not belong to such an organization. It may be beneficial for the organization to explore the reasons for the low percentage of employees who belong to professional associations to determine if other factors (such as lack of time to become involved, and lack of funds to pay membership dues) are responsible.

Based on this conclusion, the researcher recommends that organizational leaders encourage employees to join professional associations that are directly related to their jobs. One way to encourage employees to join professional associations is to fund membership dues for these organizations. While it is not customary for organizations to fund membership dues for professional associations, there may be certain benefits associated with doing this. Funding membership dues so that employees can become involved in professional associations may provide them with increased opportunities to participate in the group-based professional development activities and to form mentor relationships with professionals in their fields who are employed outside of the organization. Therefore, the organization may want to explore partnerships with professional organizations that are related to the work its employees perform or to purchase organizational memberships to increase the employees'

participation in these activities. The return on investment from the activities should greatly exceed the costs of membership dues.

Conclusion Six

Individuals with more years of professional experience in their current field reported lower levels of participation in voluntary group-based professional development. Therefore, as years of experience in the current field increased, the level of participation in professional development activities in group settings decreased. This conclusion is based on the finding of this study that years of experience significantly explained participation in voluntary group based professional development [$F_{change}(5, 122) = 4.99, p = .027$; Beta = $-.180$].

This finding may be explained by experienced employees feeling less need to participate in group-based professional development activities because they have already acquired the basic knowledge, skills, and abilities to successfully perform their jobs. An implication of this finding is that there is the potential for a knowledge gap between those who are new to the field and engaging in professional development activities to keep up with current trends, and between those who have been in the field longer who do not keep their skills current.

Future research should be conducted to identify the factors that contribute to the lower levels of participation in voluntary group-based professional development activities for individuals with more years of experience. The researcher also recommends that the organizational leaders emphasize the importance of continual learning throughout one's professional career. One way to encourage employees with more years of experience to continue learning is to provide incentives to get these employees involved in conducting professional development activities for those with

fewer years of experience. For example, serving as mentors or subject matter experts in the development and delivery of training will require that those with more years of experience keep their knowledge and skills current in order to serve as resources for others.

Conclusion Seven

Those in management/supervisory positions were more likely to participate in group based professional development activities than those in non-managerial/non-supervisory roles. This finding is based on the conclusion that job level significantly predicted participation in voluntary professional development activities that were in group settings [$F_{change}(5, 122) = 6.19, p = .014$] and was associated with an increase in participation in these activities (Beta = .309). Based on this finding, the researcher recommends that future research be conducted to identify the factors that contribute to the increase in participation in voluntary activities in group settings for managers and supervisors.

Conclusion Eight

Males were less likely than females to participate in voluntary, group-based activities. This conclusion was based on the finding that gender (i.e. males) was associated with a decrease in participation in voluntary professional development in group settings [$F(5, 122) = 8.53, p = .004$; Beta = -.215]. Future research is recommended to provide further support for this finding.

Conclusion Nine

The majority of study participants were White (Non Hispanic). This conclusion is based on the finding that 91.6% of study participants reported their ethnic group was "White (Non Hispanic)." There may be more than one explanation for why this over

representation in the White (Non-Hispanic) ethnic group may have occurred in this study. First, the percentage of White (Non Hispanic) study participants may not be representative of the percentage of White (Non Hispanic) employees in the accessible population. For instance, Kennedy (2001) supported that there is typically a lower response rate among African Americans to requests to participate in research activities. While it may be true that the lower representation in minority groups for the study is the result of a lower response rate from minorities, the potential also exists that there is an under representation of minorities in the accessible population. Therefore, a second possible explanation for the under representation of study participants in the minority ethnic groups may be the result of lower numbers of minorities employed within the organization. In order to avoid any problems associated with the under representation of minorities, the researcher recommends that management carefully review the ethnic representation within the organization to determine if this data is representative of the organization. If an under representation in minorities is found to exist, this could result in the creation of strategies to recruit more minorities.

Conclusion Ten

The majority of study participants were highly educated. This conclusion was based on the finding that 53.4% of respondents reported that the highest level of education completed was a bachelor's degree and 18.5% reported that their highest level of education was a master's degree. In all, 82.9% had earned at least an associate's degree.

REFERENCES

- Akdere, M. (2005). Social capital theory and implications for human resource development. *Singapore Management Review*, 27(2), 1-24.
- American Society for Training and Development (2005). State of the industry: ASTD's annual review of trends in employer-provided training in the United States. Retrieved March 13, 2006 from http://www.astd.org/NR/rdonlyres/834B6A38-49E8-4DBA-A7B3-68FF995614D/0/ASTD_SOIR_2002_Executive_Summary_v1.pdf.
- Ary, D., Jacobs, L. C., Razavieh (2002). *Introduction to research in education* (6th ed.). Belmont, CA: Wadsworth.
- Baron, R. A. & Markman, G. D. (2000). Beyond social capital: How social skills can enhance entrepreneurs' success. *Academy of Management Executive*, 14(1), 106-116.
- Bates, R. A. (2001). Public sector training participation, an empirical investigation. *International Journal of Training and Development*, 5(2), 136-152.
- Benson, G. (1997). Informal learning takes off. *Training and Development*, 51(5), 93-95.
- Brass, D. J. & Krackhardt, D. (1999). The Social Capital of Twenty-First Century Leaders. In J. G. Hunt, G. E. Dodge, and L. Wong (eds.), *Out-of-the-Box Leadership: Transforming the Twenty-First Century Army and Other Top Performing Organizations*. Greenwich, Conn.: JAI Press.
- Bridges, W. P. & Villemez, W. J. (1986). Informal hiring and income in the labor market. *American Sociological Review*, 51(4), 574-582.
- Brinkerhoff, R. O. & Gill, S. J. (1994). *The learning alliance: Systems thinking in human resource development*. San Francisco: Jossey-Bass.
- Broad, M. L. & Newstrom, J. W. (1992). *Transfer of training: Action-packed strategies to ensure high payoff from training investments*. Reading, Massachusetts: Addison-Wesley Publishing Company, Inc.
- Bourdieu, P. (1985). The forms of capital. In J.G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241-258). New York: Greenwood.
- Burt, R. S. (1992). *Structural holes: The sociological structure of competition*. Cambridge, MA: Harvard University Press.

- Chao, G. T. (1997). Unstructured training and development: The role of organizational socialization. In Ford, Kozlowski, Kraiger, Salas, Teachout (Eds.), *Improving training effectiveness in work organizations*. Erlbaum Associates: Mahwah, New Jersey.
- Cleveland, J. N. & Shore, L. M. (1992). Self- and supervisory-perspectives on age and work attitudes and performance. *Journal of Applied Psychology*, 77(4), 469-484.
- Cochran, W. C. (1977). *Sampling techniques* (3rd ed.). New York: Wiley.
- Cohen, D. & Prusak, L. (2001). *In good company: How social capital makes organizations work*. Boston: Harvard Business School Press.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95-S121.
- Coleman, J.S. (1990). *Foundations of social theory*. Cambridge, Mass: Harvard University Press.
- Cummings, T. G., & Worley, C. G. (2001). *Organization development and change* (7th ed.). Mason, OH: South-Western College
- Darling-Hammond, L. & McLaughlin, M.W. (1995). Policies that support professional development in an era of reform. *Phi Delta Kappan*, 76(8), 597-604.
- Davis, J.A. (1971). *Elementary survey analysis*. Englewood Cliffs, New Jersey: Prentice Hall.
- Davis, J.R. & Davis, A.B. (1998). *Effective training strategies: A comprehensive guide to maximizing learning in organizations*. San Francisco: Berrett-Koehler.
- Degenne, A. & Forse, M. (1999). *Introducing social networks*. London: Sage.
- Devine, F. & Roberts, J. M. (2003). Alternative approaches to researching social capital: A comment on van Deth's measuring social capital. *International Journal of Social Research Methodology*, 6(1), 93-100.
- Dillman, D. (1972). Increasing mail questionnaire response in large samples of the general public. *Public Opinion Quarterly*, 36(2), 254-257.
- Dillman, D. (1991). The design and administration of mail surveys. *Annual Review of Sociology*, 17(1), 225-249.
- Dillman, D. (2000). *Mail and internet surveys*. (2nd ed.). New York: John Wiley and Sons.

- Dobbs, K. (2000). Simple moments of learning. *Training*, 37(1), 52-58.
- Erickson, C. L. & Jacoby, S. M. (2003). The effect of employer networks on workplace innovation and training. *Industrial and Labor Relations Review*, 5(2), 203-222.
- Feldman, D. C. (1989). Socialization, resocialization, and training: Reframing the research agenda. In I. L. Goldstein (Ed.) *Training and development in organizations* (pp. 376-416). San Francisco: Jossey-Bass.
- Flap, H., Snijders, T., Volker, B., & van der Gaag, M. (2003). Measurement instruments for social capital of individuals. Retrieved June 16, 2006 from <http://www.xs4all.nl/~gaag/work/SSND.pdf>.
- Ford, J. K., Kozlowski, S., Kraiger, K., Salas, E., & Teachout, M. (1997). *Improving training effectiveness in work organizations*, Mahwah, NJ: Lawrence Erlbaum Associates.
- Forret, M. & Daugherty, T. (2001). Correlates of networking behavior for managerial and professional employees. *Group and Organizational Management*, 26(3), 283-311.
- Gant, C. M. (n.d.). *Professional development in a technological age: New definitions, old challenges, new resources* [Online]. Available: http://ra.terc.edu/publications/TERC_pubs/tech-infusion/prof_dev/prof_dev_frame.html
- Gant, J., Ichniowski, C., & Shaw, K. (2002). Social capital and organizational change in high-involvement and traditional work organizations. *Journal of Economics and Management Strategy*, 11(2), 289-328.
- Gargiulo, M. & Benassi, M. (2000). Trapped in your own net: Network cohesion, structural holes, and the adaptation of social capital. *Organization Science*, 11(2), 183-196.
- Granovetter, M. S. (1973). The strength of weak ties. In S. Leinhardt (Ed) *Social networks: A developing paradigm*, (pp. 1360-1380). New York: Academic Press.
- Granovetter, M. S. (1982). The strength of weak ties: A network theory revisited. In P. V. Marsden & N. Lin (Eds.), *Social structure and network analysis* (pp. 105-130). Beverly Hills: Sage Publications.
- Gubbins M.C. & Garavan, T.N. (2005). Studying HRD practitioners: A social capital model. *Human Resource Development Review*, 4(2), 189-218.
- Hair, J.F., Black, B., Babin, B., Anderson, R.E., Tatham, R.L. (2005). *Multivariate data analysis* (6th Ed.). Upper Saddle River, N.J.: Prentice Hall.

- Hair, J.F., Tatham, R.L., Anderson, R.E. & Black, W. (1998). *Multivariate data analysis* (5th Ed.). Upper Saddle River, N.J.: Prentice Hall.
- Hatala, J. P. (2003). Making the transition to re-employment: Social networks and their impact on social assistance recipients. (Doctoral dissertation, University of Toronto, 2003). *Dissertation Abstracts International*, 64, 3845.
- Hatala, J. P. (2006). Social network analysis in human resource development: A new methodology. *Human Resource Development Review*, 5(1), 45-71.
- Holton, E. F., Bates, R. A., Ruona W. E. (2000). Development of a generalized learning transfer system inventory. *Human Resource Development Quarterly*, 11(4), 333-360.
- Inkeles, A. (2000). Measuring social capital and its consequences. *Policy Sciences*, 33(3/4), 245-268.
- Inkpen, A. C. & Tsang, E. W. (2005). Social capital, networks, and knowledge transfer. *Academy of Management Review*, 30(1), 146-166.
- Johnson, H. G. (1960). The political economy of opulence. *Canadian Journal of Economics and Political Science*, 26(4), 552-564.
- Kale, P., Singh, H., & Perlmutter, H. (2000). Learning and protection of property assets in strategic alliances: Building relational capital. *Strategic Management Journal*, 21(3), 217-237.
- Kennedy, B. M. (2001). Obstacles in recruiting African Americans for clinical trials. (Doctoral dissertation, Louisiana State University, 2001). *Dissertation Abstracts International*, 62, 2355.
- Kilduff, M. & Tsai, W. (2003). *Social networks and organizations*. London: Sage
- King, N. K. (2004). Social capital and nonprofit leaders. *Nonprofit Management and Leadership*, 14(4), 471-486.
- Korpi, T. (2001). Good friends in bad times? Social networks and job search among the unemployed in Sweden. *Acta sociologica*, 44(2), 157-171.
- Krishna, A. & Shrader, E. (1999). *Social capital assessment tool*. Paper presented at the World Bank Conference on Social Capital and Poverty Reduction, 1-21.
- Lein, L. (1983). The ties that bind: An introduction. In L. Lein & M. B. Sussman (Eds.), *The ties that bind: Men's and women's social networks: Vol. 5. Marriage and family review*. New York: Haworth Press.

- Leonard, M. (2004). Bonding and bridging social capital: Reflections from Belfast. *Sociology*, 38(5), 927-944.
- Lin, N. (1982). Social resources and instrumental action. In Marsden, P. V. and Lin, N. (Eds.), *Social structure and network analysis*. Beverly Hills: Sage.
- Lin, N. (1999a). Building a theory of social capital. *Connections*, 22(1), 28-51.
- Lin, N. (1999b). Social networks and status attainment. *Annual Review of Sociology*, 25(1), 467-487.
- Lin, N. (2001). *Social capital: A theory of social structure and action*. Cambridge, New York: Cambridge University Press.
- Lin, N. & Dumin, M. (1986). Access to occupations through social ties. *Social Networks*, 8(4), 365-385.
- Lohman, M. C. (2000). Environmental inhibitors to informal learning in the workplace: A case study of public school teachers. *Adult Education Quarterly*, 50(2), 83-102.
- Lohman, M. C. (2005). A survey of factors influencing the engagement of two professional groups in informal workplace learning activities. *Human Resource Development Quarterly*, 16(4), 501-527.
- Lohman, M. C. & Woolf, N. H. (2001). Self-initiated learning activities of experienced public school teachers: methods, sources, and relevant organizational influences. *Teachers and Teaching: Theory and Practice*, 7(1), 60-74.
- London, M. (1989). *Managing the training expertise*. San Francisco: Jossey-Bass.
- Loury, G. C. (1977). A dynamic theory of racial income differences. In *Women, Minorities, and Employment Discrimination*, ed P. A. Wallace, A. M. LA Mond, pp. 153-186. Lexington, MA: Heath
- Loury, G. C. (1981). Intergenerational transfers and the distribution of earnings. *Econometrica*, 49, 843-867.
- Marsick, V.J. & Watkins, K.E. (1990). *Lessons from informal and incidental learning in the workplace*. London: Routledge.
- Marx, K. (1933/1976). *Wage-labour and capital and value, price, and profit*. New York: International Publishers.

- Mathieu, J.E., Tannenbaum, S.I., Salas, E. (1992). Influences of individual and situational characteristics on measures of training effectiveness. *Academy of Management Journal*, 35(4), 828-847.
- Maurer, T. J., Weiss, E. M., & F. G. Barbeite. (2003). A model of involvement in work related learning and development activity: The effects of individual, situational, motivational and age variables. *Journal of Applied Psychology*, 88(4), 707-724.
- McEnrue, M. P. (1989). Self-development as a career management strategy. *Journal of Vocational Behavior*, 34, 57-68.
- McDonald, K. S. & Hite, L. M. (1997). Deterrents to participation in women only learning events: A case study. *Academy of Human Resource Development Conference Proceedings*, 11-16.
- Miller, L. E. & Smith, K. L. (1983). Handling non-response issues. *Journal of Extension*, 21, 45-50.
- Mohan, G. & Mohan, J. (2002). Placing social capital. *Progress in Human Geography*, 26(2), 191-210.
- Nahapiet & Ghoshal, (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23, 242-266.
- National Center for Education Statistics (2005a). Participation in adult education for work-related reasons: 2002-2003. United States Department of Education. Institute of Education Sciences. Retrieved March 13, 2006 from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2006040>
- National Center for Education Statistics (2005b). Reason's for adults' participation in work-related courses, 2002-03. United States Department of Education. Institute of Education Sciences. Retrieved May 25, 2006 from <http://nces.ed.gov/pubs2005/2005088.pdf>.
- Naquin, S.S. & Holton, E.F. (2002). The effects of personality, affectivity, and work commitment on motivation to improve work though learning. *Human Resource Development Quarterly*, 13(4), 357-376.
- Noe, R.A. (1986). Training attributes and attitudes: Neglected influences on training effectiveness. *Academy of Management Review*, 11, 736-749.
- Noe, R.A. & Wilk, S.L. (1993). Investigation of the factors that influence employees' participation in development activities. *Journal of Applied Psychology*, 78, 291-302.

- Noe, R.A., Wilk, S.L., Mullen, E.J., & Wanek, J.E. (1997). Employee Development: Issues in construct definition and investigation of antecedents. Individual and situational influences on training motivation. In J.K. Ford, S.W. Kozlowski, K. Kraiger, E. Salas, & M. Teachout (Eds.), *Improving training effectiveness in work organizations* (pp. 193-221). Hillsdale, NJ: Erlbaum.
- Peters, L.H. & O'Connor, E.J. (1980). Situational constraints and work outcomes. The influence of a frequently overlooked construct. *Academy of Management Review*, 5, 391-397.
- Porras, J.I. & Silvers, R. C. (1991). Organization development and transformation. *Annual Review of Psychology*, 42, 51-78.
- Portes, A. (1998). Social capital: Its origins and applications in modern society. *Annual Review of Sociology*, 24, 1-24.
- Portes, A. (2000). The two meanings of social capital. *Sociological Forum*, 15(1), 1-12.
- Putnam, R. D. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton, NJ: Princeton University Press.
- Putnam, R. D. (2000). *Bowling alone*. New York: Simon & Schuster.
- Rindfleisch, A. & Moorman, C. (2001). The acquisition and utilization of information in new product alliances: A strength-of-ties perspective. *Journal of Marketing*, 65(2) 1-19.
- Salas, E. & Canon-Bowers, J. A. (2001). The science of training: A decade of progress. *Annual Review of Psychology*, 52, 471-499.
- Sandefur, R. L. & Laumann, E. O. (1998). A paradigm for social capital. *Rationality and Society*, 10, 481-501.
- Schacter, (2001). National Association of Social Workers. Retrieved December 17, 2005 from <http://www.naswnyc.org/ex10.html>.
- Schuller, T. (2001). The complementary roles of human and social capital. *Canadian Journal of Policy Research*, 89-106.
- Seibert, S. E., Kraimer, M. L., & Liden, R. C. (2001). A social capital theory of career success. *Academy of Management Journal*, 44(2), 219-237.
- Snijders, T. A. B. (1999). Prologue to the measurement of social capital. *La Revue Tocqueville* XX(1), 27-44.

- Specht, H. (1986). Social support, social networks, social exchange, and social work practice. *Social Service Review*, 218-240.
- Swanson, R. A. (1994). *Analysis for improving performance: Tools for diagnosing organizations and documenting workplace expertise*. San Francisco: Berrett-Koehler.
- Swanson, R. A. & Holton, E. F. (2001). *Foundations of human resource development*. San Francisco: Berrett-Koehler.
- Syman, G. (2000). The learning organization and social capital: an unlikely alliance? *Human Resource Development International*, 3(2), 235-240.
- Tharenou, P. (1997). Determinants of participation in training and development. In C. L. Cooper & D. M. Rousseau (Eds.), *Trends in organizational behavior*. New York: Wiley and Sons.
- Tharenou, P. (2001). The relationship of training motivation to participation in training and development. *Journal of Occupational and Organizational Psychology*, 74(5), 599-622.
- Tindall, D. B. & Wellman, B. (2001). Canada as social structure: Social network analysis and Canadian sociology. *Canadian Journal of Sociology* 26(3), 265-308.
- Van Der Gaag, M. & Snijders, T.A.B. (2003). A comparison of measures for individual social capital. Retrieved June 28, 2006 from http://www.xs4all.nl/~gaag/work/comparison_paper.pdf.
- Van Deth, J. W. (2003). Measuring social capital: orthodoxies and continuing controversies. *International Journal of Social Research Methodology*, 6(1), 79-82.
- Warr, P. & Birdi, K. (1998). Employee age and voluntary development activity. *International Journal of Training and Development*, 2(3), 190-204.
- Yukl, G. A. (1998). *Leadership in organizations* (4th ed.). Upper Saddle River, N.J.: Prentice Hall.

APPENDIX A

PROFESSIONAL DEVELOPMENT SURVEY

PROFESSIONAL DEVELOPMENT SURVEY

Your responses will be kept confidential. The code number is for tracking purposes only. The list matching the code number with the participant names will be destroyed after the surveys are returned. By completing and returning this survey, you are agreeing to participate in this study. Your cooperation is appreciated!

PART I: Professional Development History in the Past 12 Months

Directions: Please indicate the extent to which you have participated in the following professional development activities **within the past 12 months**. Enter the number of mandatory (required by your employer) activities and the number of voluntary (initiated by you of your own free will) activities in the boxes provided below.

Note: For any activities in which you have not participated, please write a "0."

PROFESSIONAL DEVELOPMENT ACTIVITIES		
TYPE OF ACTIVITY	EXTENT OF PARTICIPATION IN PAST 12 MONTHS	
	Number of Mandatory	Number of Voluntary
Internal Training (Provided by the Employer)		
Individual/Self-paced (e.g., independent study, correspondence, computer-based training, etc.)		
Group setting (e.g., traditional classroom-based training)		
External Training (Provided by a Professional Association) Reimbursed by the Employer		
Individual/Self-paced (e.g., independent study, correspondence, computer-based training, etc.)		
Group setting (e.g., traditional classroom-based training, conferences, etc.)		
External Training (Provided by a Professional Association) NOT Reimbursed by the Employer		
Individual/Self-paced (e.g., independent study, correspondence, computer-based training etc.)		
Group setting (e.g., traditional classroom-based, conferences, etc.)		

PLEASE GO ON TO THE NEXT PAGE

PROFESSIONAL DEVELOPMENT ACTIVITIES		
TYPE OF ACTIVITY	EXTENT OF PARTICIPATION IN PAST 12 MONTHS	
College Courses Paid for by the Employer	Number of Mandatory	Number of Voluntary
Individual/Self-paced (e.g., independent study, correspondence, computer-based training)		
Group setting (e.g., traditional classroom-based)		
College Courses <u>NOT</u> Paid for by the Employer	Number of Mandatory	Number of Voluntary
Individual/Self-paced (e.g., independent study, correspondence, computer-based training)		
Group setting (e.g., traditional classroom-based)		
Self-Initiated Learning Activities <i>Note: Please indicate to the best of your abilities</i>	Number of Mandatory	Number of Voluntary
Reading professional journals/magazines (the number of journals or magazines from which you read 1 or more articles in the past 12 months)		
Researching work related information in a library (e.g., university, public, etc.)		
Researching work related information from a private collection of resources (e.g., resources belonging to an organization or an individual)		
Searching the internet for work related information		
Seeking work related information from a mentor/colleague		
Other Work Related Learning Activities – <i>Please Specify</i>	Number of Mandatory	Number of Voluntary

PLEASE GO ON TO THE NEXT PAGE

PART II: Professional Interaction History throughout Your Career

In this section, you will be asked to provide information about 1) the people you have contacted; 2) the people who have contacted you; and 3) people you have contacted to refer you to others throughout your career.

1. List (by initials) up to 10 people you have contacted throughout your career when you needed help advancing in your career. "Advancing your career" may include such activities as getting a job, improving job performance, seeking a promotion or a pay raise, etc.

Next, circle the appropriate number in the columns to the right of the initials. If you circle "2" under the column titled "B. Employment," leave columns C and D blank and complete column E.

Note: If two or more people have the same initials, provide the initials followed by a number to distinguish between them (Example: XY and XY2).

A. Person's Initials	B. Employment: 1 = Works for your organization (go on to part C) 2 = Does NOT work for your organization (skip to part E)	C. Work setting: 1 = works within your department 2 = works outside of your department	D. Position level within your organization: 0 = Lower than yourself 1 = Same as yourself 2 = Higher than yourself	E. Frequency of contact with this individual: 1 = daily 2 = weekly 3 = monthly 4 = quarterly 5 = yearly or less
Example -XY	(1) 2	(1) 2	0 1 (2)	1 2 3 (4) 5
Example -XY2	1 (2)	1 2	0 1 2	1 2 (3) 4 5
1.	1 2	1 2	0 1 2	1 2 3 4 5
2.	1 2	1 2	0 1 2	1 2 3 4 5
3.	1 2	1 2	0 1 2	1 2 3 4 5
4.	1 2	1 2	0 1 2	1 2 3 4 5
5.	1 2	1 2	0 1 2	1 2 3 4 5
6.	1 2	1 2	0 1 2	1 2 3 4 5
7.	1 2	1 2	0 1 2	1 2 3 4 5
8.	1 2	1 2	0 1 2	1 2 3 4 5
9.	1 2	1 2	0 1 2	1 2 3 4 5
10.	1 2	1 2	0 1 2	1 2 3 4 5

PLEASE GO ON TO THE NEXT PAGE

2. List (by initials) up to 10 people who have contacted you throughout the course of your career for help with advancing in their careers. “Advancing their careers” may include such activities as getting a job, improving job performance, seeking a promotion or a pay raise, etc.

Next, circle the appropriate number in the columns to the right of the initials. If you circle “2” under the column titled “B. Employment,” leave columns C and D blank and complete column E.

Note: If two or more people have the same initials, provide the initials followed by a number to distinguish between them (Example: XY and XY2).

A. Person's Initials	B. Employment: 1 = Works for your organization (go on to part C) 2 = Does NOT work for your organization (skip to part E)	C. Work setting: 1 = works within your department 2 = works outside of your department	D. Position level within your organization: 0 = Lower than yourself 1 = Same as yourself 2 = Higher than yourself	E. Frequency of contact with this individual: 1 = daily 2 = weekly 3 = monthly 4 = quarterly 5 = yearly or less
Example -XY	(1) 2	(1) 2	0 1 (2)	1 2 3 (4) 5
Example -XY2	1 (2)	1 2	0 1 2	1 2 (3) 4 5
1.	1 2	1 2	0 1 2	1 2 3 4 5
2.	1 2	1 2	0 1 2	1 2 3 4 5
3.	1 2	1 2	0 1 2	1 2 3 4 5
4.	1 2	1 2	0 1 2	1 2 3 4 5
5.	1 2	1 2	0 1 2	1 2 3 4 5
6.	1 2	1 2	0 1 2	1 2 3 4 5
7.	1 2	1 2	0 1 2	1 2 3 4 5
8.	1 2	1 2	0 1 2	1 2 3 4 5
9.	1 2	1 2	0 1 2	1 2 3 4 5
10.	1 2	1 2	0 1 2	1 2 3 4 5

PLEASE GO ON TO THE NEXT PAGE

3. List (by initials) up to 10 people you have contacted throughout your career to refer you to other individuals who could help you advance in your career. “Advancing your career” may include such activities as getting a job, improving job performance, seeking a promotion or a pay raise, etc.

Next, circle the appropriate number in the columns to the right of the initials. If you circle “2” under the column titled “B. Employment,” leave columns C and D blank and complete column E.

Note: If two or more people have the same initials, provide the initials followed by a number to distinguish between them (Example: XY and XY2).

A. Person's Initials	B. Employment: 1 = Works for your organization (go on to part C) 2 = Does NOT work for your organization (skip to part E)	C. Work setting: 1 = works within your department 2 = works outside of your department	D. Position level within your organization: 0 = Lower than yourself 1 = Same as yourself 2 = Higher than yourself	E. Frequency of contact with this individual: 1 = daily 2 = weekly 3 = monthly 4 = quarterly 5 = yearly or less
Example -XY	(1) 2	(1) 2	0 1 (2)	1 2 3 (4) 5
Example -XY2	1 (2)	1 2	0 1 2	1 2 (3) 4 5
1.	1 2	1 2	0 1 2	1 2 3 4 5
2.	1 2	1 2	0 1 2	1 2 3 4 5
3.	1 2	1 2	0 1 2	1 2 3 4 5
4.	1 2	1 2	0 1 2	1 2 3 4 5
5.	1 2	1 2	0 1 2	1 2 3 4 5
6.	1 2	1 2	0 1 2	1 2 3 4 5
7.	1 2	1 2	0 1 2	1 2 3 4 5
8.	1 2	1 2	0 1 2	1 2 3 4 5
9.	1 2	1 2	0 1 2	1 2 3 4 5
10.	1 2	1 2	0 1 2	1 2 3 4 5

PLEASE GO ON TO THE NEXT PAGE

PART III: Demographics

Directions: Please read the following items and mark your responses in the space provided.

1. Gender: ☐ Male
☐ Female
2. Age as of your last birthday: _____
3. Race/Ethnicity:
☐ White (Non Hispanic) ☐ Asian or Pacific Islander
☐ Black (Non Hispanic) ☐ Native American
☐ Hispanic ☐ Other(Specify) _____
4. Years of professional experience in your current field: _____
5. Years of experience with the current employer: _____
6. Job level: ☐ Managerial/Supervisory
☐ Non-Managerial/Non-Supervisory
7. Highest level of education completed (check one):
☐ High School/GED
☐ Associate Degree
☐ Bachelor's Degree
☐ Master's Degree (including MBA)
☐ Professional Degree (e.g., J.D., M.D.)
☐ Doctoral Degree (e.g., Ph.D., Ed.D., Psy.D.)
8. Please list all professional associations to which you belong that are directly related to your job (i.e. in your field):

9. Please list all professional associations to which you belong that are indirectly related to your job (e.g., toastmasters/toastmistress):

THANK YOU!

Please return in the self-addressed, stamped envelope to:

Sylvia Caillier Melancon/Donna H. Redmann
Louisiana State University
School of Human Resource Education and Workforce Development
142 Old Forestry Building
Baton Rouge, LA 70803-5477
(225)288-9354
scaill2@lsu.edu

APPENDIX B
PRE-NOTIFICATION MEMO E-MAIL

[Name],

In the next few days, you will be receiving a survey for a professional development study conducted by the LSU School of Human Resource Education and Workforce Development. The study was designed specifically for [Company Name] corporate professional staff and you are one of a small number of employees selected to provide input. The study will help to provide better insight into the types of professional development activities in which employees at [Company Name] participate.

Please take a few minutes of your time to complete the survey and return it to LSU in the self-addressed, postage-paid envelope. Your cooperation is appreciated!

[Name]

Director of Training

APPENDIX C
SURVEY COVER LETTER

August 16, 2006

Name
Company
Department

U.S. organizations spend billions of dollars each year on professional development for their employees. In addition to the opportunities provided by employers, there are a variety of activities that individuals participate in outside of work to keep up with new developments in their respective fields and to improve their performance in their jobs. There is still much to be learned about which activities professionals participate in and the possible role that friends, co-workers, and acquaintances play in an individual's professional development.

In an effort to increase the understanding of participation in professional development, we are conducting a study to investigate whether there is a relationship between professional development and professional relationships. You are one of a small number of employees at the [Company] corporate office who are being asked to provide information about participation in professional development activities. The success of this study is contingent upon your willingness to provide us with information about how you continue to keep your knowledge, skills, and abilities current. The information you provide will help ensure that professional development opportunities continue to be valued and supported by organizations.

Please complete the enclosed questionnaire, which should take 10-20 minutes to complete. We have enclosed a postage paid, self-addressed envelope for your convenience. Please return the questionnaire by August 23, 2006. The questionnaires are coded for mailing purposes only and your responses will be confidential. If you do not wish to participate, you may return the survey blank to avoid being contacted through a follow-up letter.

By completing and returning the enclosed survey, you are agreeing to participate in this study. If you have questions about your rights as a study participant, contact Robert Mathews, Institutional Review Board Chairman, 203 B-1 David Boyd Hall, 225-578-8692.

Thank you for your assistance. If you have questions or concerns about this study, you may contact Sylvia Melancon by phone at 225-288-9354 or by email at scaill2@lsu.edu.

Sincerely,

Sylvia Caillier Melancon
Principal Investigator

Donna H. Redmann
Professor

APPENDIX D
POST CARD REMINDER



If you have completed and returned the professional development survey to us, please accept our sincere thanks. If you have not, please complete it today. The information you provide will be used to help ensure that professional development opportunities continue to be valued and supported by organizations. If you did not receive the survey, or if it is misplaced, please contact Sylvia Melancon at 225- 288-9354 or scaill2@lsu.edu and we will send you a replacement.

Sincerely,

Sylvia Caillier Melancon
Principal Investigator

Donna H. Redmann
Professor

APPENDIX E
SURVEY FOLLOW-UP LETTER

September 14, 2006

Name
Company
Department

You recently received a brief questionnaire for a study that is being conducted on professional development. You are one of a small number of [Company] employees selected to participate in this study. As a professional employee at [Company], your input is invaluable.

If you have already returned the questionnaire, please disregard this follow-up letter. If you have not returned the questionnaire, please take 10-20 minutes to complete it and return it in the postage paid envelope provided. The questionnaires are coded for mailing purposes only and your responses will be confidential.

By completing and returning the enclosed survey, you are agreeing to participate in this study. If you have any questions about your rights as a study participant or other concerns, contact Robert C. Mathews, Institutional Review Board Chairman, 203 B-1 David Boyd Hall, 225-578-8692.

Thank you for your assistance with this research effort. If you have questions or concerns about this study you may contact Sylvia Melancon by phone at 225-288-9354 or by email at scaill2@lsu.edu.

Sincerely,

Sylvia Caillier Melancon
Principal Investigator

Donna H. Redmann
Professor

APPENDIX F

MEMBERSHIPS IN PROFESSIONAL ASSOCIATIONS REPORTED BY PROFESSIONAL EMPLOYEES OF A PROFIT-BASED ORGANIZATION IN THE SOUTHEASTERN UNITED STATES

Memberships in Professional Associations Reported by Professional Employees of a Profit-Based Organization in the Southeastern United States

Directly Related to the Job	Indirectly Related to the Job
AMA	AICHE
American Society of Safety Engineers	Parent Teacher Association
IEEE	American Welding Society
Construction Industry Institute	Southeastern Alumni Association
Construction Management Association of America	Toastmasters
ASQ	Arabian Horse Association
AWS	Greater Baton Rouge Real Estate Association
ISHM	Share Our Strength
NSC	USTA
BCSP	MENSA
Engineer in Training	Institute of Management Consultants
AICPA	American Veterinary Medical Association
LCPA	National Association of Black Professional Women
Society of CPAs	National Association of Industrial Technology
Institute of Internal Auditors	Boy Scouts of America
National Conference of Mayors	
National League of Cities	
Associated Builders and Contractors	
Women in Media	
American Bar Association	
Louisiana State Bar	
Texas State Bar	
American Planning Association	
American Institute of Certified Planners	
Chi Epsilon	
ASCE	
CES	
BRBA	
LSBA	
ECOA	
Corporate Roundtable	
National Safety Council	
Louisiana Engineering Society	
Society of Accident Reconstructionists	
Scaffold Industry Association	
American Welding Society	
NIWIC	
AICPA	
EANO	
Trenchless Technology	
American Society of Mechanical Engineers	

(Table continued)

American Society of Heating, Refrigerating, &
Air Conditioning Engineers
Institute of Industrial Engineering
MBA Association
CFME
National Contracts Management Association
LSU Construction Management Alumni
Association
SMRE
Foundation for Industrial Maintenance
Excellence
University of Tennessee's MRC
Louisiana Chemical Association
ASTD
ASTD-Baton Rouge
ISPI
National Association of Stock Plan
Professionals
SHRM
Association for the Advancement of Cost
Engineering International
AISC
Society for International Development
National Groundwater Association
Alabama Professional Geologists Registration
Mississippi Professional Geologists
Mississippi Professional Geologists
Registration
Georgia Professional Geologist
DCBA
CFA Society of New Orleans
ARM
AFP
PMI
PMD
Risk Management Institute
Louisiana Liaison Group
Society of Environment Toxicology &
Chemistry
BRGS
Baton Rouge Chamber of Commerce
National Association of Purchasing
Management
SAME
ACEE

VITA

Sylvia Caillier Melancon is a native of Lafayette, Louisiana, and is the daughter of Dr. James A. Caillier and Jerri Caillier. In 1995, she received a Bachelor of Science degree in psychology from the University of Louisiana in Lafayette and was named “Outstanding Graduate in Psychology.” In 1999, she received a Master of Science degree in psychology from the University of Louisiana in Lafayette, where she taught psychology courses as a graduate assistant, and later as an adjunct instructor. At that time, she also served as adjunct instructor for South Louisiana Community College in Lafayette, Louisiana. In 2000, she became employed full time at South Louisiana Community College as a Counselor/Psychology Instructor.

In 2002, Melancon enrolled in the doctoral program for human resource and leadership development within the School of Human Resource Education and Workforce Development at Louisiana State University. While completing her coursework, she was granted a graduate assistantship with the Louisiana State University Division of Workforce Development, where she later worked full time as a Research Associate from 2005 to 2006. Her responsibilities included conducting job task analyses, needs assessments, the publication of research on assessment center design, and the design and delivery of leadership development courses to the state of Louisiana’s Civil Service employees as part of the Public Management Program.

She is married to Girard James Melancon and resides in Baton Rouge, Louisiana. The degree of Doctor of Philosophy will be conferred upon her in May of 2007.